PART II

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TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

Miscellaneous Amendments Respecting Dangerous Cargoes

This Part II of the FEDERAL REGISTER issue dated June 28, 1958, contains miscellaneous amendments respecting dangerous cargoes, issued by the United States Coast Guard.

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 58-9]

Miscellaneous Amendments Respecting Dangerous Cargoes

Notices regarding proposed changes in the navigation and vessel inspection regulations were published in the FEDERAL REGISTER dated February 12, 1958 (23 F. R. 905-910), and March 1, 1958 (23 F. R. 1268-1270). Pursuant to these notices a public hearing was held on March 18, 1958, by the Merchant Marine Council at Washington, D. C.

This document is the fourth of a series covering the regulations and actions considered at this public hearing and annual session of the Merchant Marine Council and contains the final actions taken with respect to Items XIV, XV, and XVI of the Agenda. The first document, identified as CGFR 58-8 (23 F. R. 2604), contained miscellaneous amendments to inspection requirements to implement the act of May 10, 1956, as amended (46 U. S. C. 390-390g), which were based on Item III of the Agenda. The second document, identified as CGFR 58-17 (23 F. R. 3376-3384), contained the requirements governing private aids to navigation on the outer Continental Shelf and waters under the jurisdiction of the United States, which were based on Item I of the Agenda. The third document, identified as CGFR 58-18 (23 F. R. 3347, 3348), contained new requirements regarding radar observers and miscellaneous changes respecting renewal of merchant mariner's licenses, which were based on Item IV of the Agenda.

All the comments, views, and data submitted in connection with the items considered by the Merchant Marine Council at this public hearing have been very helpful to the Coast Guard and are very much appreciated. On the basis of the information received, certain proposed regulations were revised. The following items considered at the public hearing held March 18, 1958, as revised, are adopted and included in this document:

Item XIV—Detailed Regulations Governing the Transportation of Military Explosives on Board Vessels (46 CFR 146.29-1 to 146.29-100).

Item XV—Dangerous Cargo Regulations; Miscellaneous Amendments (46 CFR 146.02, 146.03, 146.04, 146.05, 146.06, 146.08, 146.09, 146.20, 146.21, 146.22, 146.23, 146.24, 146.25, 146.27, 147.05).

Item XVI—Inspection and Certification of Cargo and Miscellaneous Vessels Transporting Certain Dangerous Cargoes in Bulk (46 CFR 24.05, 30.01, 31.01, 70.05, 90.05, 91.20, 91.25, 98.01-98.25, 110.05, 146.22, 146.23, 146.24, 175.05).

The proposals in Item XIV of the Agenda, regarding "Detailed Regulations Governing the Transportation of Military Explosives on Board Vessels," were modified on the basis of some of the information received. Changes were made in 46 CFR 146.29-11 (a), subparagraphs (1), (3), 146.29-11 (b), subparagraphs (29), (33), (49), 146.29-11 (c), 146.29-13 (a), 146.29-19 (b), 146.29-25 (c), (2), (n), (o), (p), 146.29-27, 146.29-35 (a), (d), (f), 146.29-41, 146.29-41 (g) (4), (j), 146.29-59, 146.29-63 (g), 146.29-73 (a), 146.29-89 (b), 146.29-97, Chart B, and in 146.29-100, the "Description" of Class I ammunition, the "Handling" of Class IX-C, Class X-B, X-C, X-D, X-E, XI-A, XI-B, XI-C, and XI-D, the "ICC marking" for Class X-C, X-D, X-E, the "ICC Class" for Class XI-C and XI-D, and the "Hazard" respecting Class XI-C.

The regulations in 46 CFR 146.29-1 to 146.29-100, inclusive (Item XIV), are of primary interest to the various agencies within the Department of Defense and these revised regulations have been worked out with the assistance and cooperation of these agencies who have approved or concurred in them. In addition, the Bureau of Explosives and the National Cargo Bureau have registered no objections to the revised regulations. These regulations provide for the shipment of certain new types of military missile fuels and oxidizers. The other changes in these regulations are either of a clarifying nature or editorial in scope to bring them up to date.

The proposals in Item XV of the Agenda, regarding "Miscellaneous Amendments to Dangerous Cargo Regulations," were modified as a result of some of the information received. Changes were made in 46 CFR 146.06-8, 146.06-9 (d), 146.06-19, 146.20-35 (b), and 147.05-100. Numerous comments were received regarding the proposed regulations in 46 CFR 146.07-1 to 146.07-40 concerning "Railroad Vehicles, Highway Vehicles, Vans, or Portable Containers Loaded With Explosives or Other Dangerous Articles and Transported on Board Ocean Vessels." Several informal conferences have been held with interested parties regarding these proposed regulations and on the basis of these conferences and comments the regulations have been rewritten.

The provisions of R. S. 4472, as amended (46 U. S. C. 170), require that the land and water regulations governing the transportation of dangerous articles or substances shall be as nearly parallel as practicable. The provisions in 46 CFR 146.02-18 and 146.02-19 make the Dangerous Cargo Regulations applicable to all shipments of dangerous cargoes by vessels. The Interstate Commerce Commission in Order No. 34 has made changes in the ICC Regulations with respect to the definitions, descriptions, descriptive names, classifications, specifications of containers, packing, marking, labeling, and certifications which are now in effect for land transportation. Various amendments to the Dangerous Cargo Regulations in 46 CFR Part 146 have been included in this document in order that these regulations governing water transportation of certain dangerous cargoes will be as nearly parallel as practicable with the regulations of the Interstate Commerce Commission which govern the land transportation of the same commodities. For those changes in 46 CFR Parts 146 and 147, which involved changes other than shippers' requirements, the proposed amendments were considered at the Merchant Marine Council public hearing held on March 18, 1958.

Since the amendments in this document to 46 CFR Part 146 (other than 146.29-1 to 146.29-100, 146.22-35, 146.23-35, 146.23-50, 146.24-80, and 146.24-85) and 147 are interpretations of law, revised requirements to agree with existing ICC Regulations, relaxations of previous requirements, or are editorial in nature, it is hereby found that compliance with the Administrative Procedure Act respecting effective date requirements of regulations is unnecessary.

The proposals in Item XVI of the Agenda regarding "Inspection and Certification of Cargo and Miscellaneous Vessels Transporting Certain Dangerous Cargoes in Bulk" were modified as a result of information received. The amendments based on Item XVI will transfer current requirements respecting construction and arrangement of tanks and the handling of cargoes in bulk governing the transportation of elemental phosphorus in water, sulfuric acid, hydrochloric acid, liquid chlorine, and anhydrous ammonia from 46 CFR 146.22-35, 146.23-35, 146.23-50, 146.24-80 and 146.24-85 to a new part designated 46 CFR Part 98 in Subchapter I (Cargo and Miscellaneous Vessels), and appropriate cross references are inserted as 46 CFR 31.01-1 (e), 91.20-20 (a) (5), and 91.25-37. The major changes in the proposals deal with the effective date for the inspection and certification of vessels which will be required, as well as to permit tank barges inspected and certificated in accordance with Subchapter D (Tank Vessels) of this chapter to carry the dangerous cargoes specifically noted. Those provisions which require inspection and certification of vessels shall be in effect on and after January 1, 1959, for new construction and on and after January 1, 1960, for existing vessels. Vessels in existence on January 1, 1959, and vessels contracted for prior to January 1, 1959, which may carry in bulk any of these dangerous cargoes shall meet the applicable requirements of Subchapter I (Cargo and Miscellaneous Vessels) or Subchapter D (Tank Vessels) as is reasonable and practicable in the opinion of the Officer in Charge, Marine Inspection, to qualify for certification. In this respect the Officer in Charge, Marine Inspection, may grant departures from specific requirements if in his opinion the circumstances warrant such departures. However, the Officer in Charge, Marine Inspection, in any case shall satisfy himself that the vessel and its equipment are in good condition and satisfactory for the purposes intended.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Orders 120, dated July 31, 1950 (15 F. R. 6521), 167-14, dated November 26, 1954 (19 F. R. 8026), 167-20, dated June 18, 1956 (21 F. R. 4894), and CGFR 56-28, dated July 24, 1956 (21 F. R. 5659), to promulgate regulations in accordance with the statutes cited with the regulations below, the following amendments and regulations are prescribed and shall become effective on and after date of publication of this document in the FEDERAL REGISTER, unless otherwise specifically provided in the text of the regulations:

Subchapter C—Uninspected Vessels

PART 24—UNINSPECTED VESSELS

SUBPART 24.05—APPLICATION

Section 24.05–1 is amended by revising Table 24.05–1 to read as follows:

§ 24.05–1 *Vessels subject to the requirements of this subchapter.* (a) * * *

TABLE 24.05–1 (a)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2] [3] [4] or Subchapter T—Small Passenger Vessels [2] [4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2] [5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2] [3] [6]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5.[8]
	Vessels over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers.[7] 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, issued a permit to carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor	Vessels of not over 15 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers.[7] 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	None, except if required by 46 CFR Part 146.[6]	None.
Non-self-propelled	Vessels not over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges and inland barges when required by 46 CFR Part 146,[6] except those covered by columns 3 and 4.	All barges carrying passengers except those covered by column 4.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.

[3] Public nautical school ships, other than vessels of the Navy and Coast Guard shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.

[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1950 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

(R. S. 4405, as amended, 4462, as amended, sec. 17, 54 Stat. 166, as amended; 46 U. S. C. 375, 416, 526p)

Subchapter D—Tank Vessels

PART 30—GENERAL PROVISIONS

SUBPART 30.01—ADMINISTRATION

Section 30.01–5 (d) is amended by revising Table 30.01–5 (d) to read as follows:

§ 30.01–5 *Application of regulations—TB/ALL.* * * *
(d) * * *

TABLE 30.01–5 (d)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 3]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 11]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5.[8]
	Vessels over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers.[7] 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, issued a permit to carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor	Vessels of not over 15 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers.[7] 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	None, except if required by 46 CFR Part 146.[6]	None.
Non-self-propelled	Vessels not over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges and inland barges when required by 46 CFR Part 146,[5] except those covered by columns 3 and 4.	All barges carrying passengers except those covered by column 4.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.

[3] Public nautical school ships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.

[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

(R. S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U. S. C. 391a, 416. Interprets or applies sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917; 3 CFR, 1952 Supp.)

PART 31—INSPECTION AND CERTIFICATION

SUBPART 31.01—GENERAL

Section 31.01–1 is amended by adding a new paragraph (e), reading as follows:

§ 31.01–1 *Inspections required—TB/ALL.* * * *

(e) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

(R. S. 4405, as amended, 4417a, as amended, 4462, as amended; 46 U. S. C. 375, 391a, 416. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917; 3 CFR, 1952 Supp.)

Subchapter H—Passenger Vessels

PART 70—GENERAL PROVISIONS

SUBPART 70.05—APPLICATION

1. Section 70.05–1 (a) is amended by revising Table 70.05–1 (a) to read as follows:

§ 70.05–1 *Vessels subject to the requirements of this subchapter.* (a) * * *

TABLE 70.05–1 (a)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [3] [4] or Subchapter T—Small Passenger Vessels [3] [4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [3] [4]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [3] [6]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5.[8]
	Vessels over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers.[7] 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, issued a permit to carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor	Vessels of not over 15 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers.[7] 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	None, except if required by 46 CFR Part 146.[5]	None.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.

[3] Public nautical school ships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.

[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

TABLE 70.05-1 (a)—Continued

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 3 6]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Non-self-propelled	Vessels not over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges and inland barges when required by 46 CFR Part 146,[5] except those covered by columns 3 and 4.	All barges carrying passengers except those covered by column 4.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.
[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.
[3] Public nautical school ships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.
[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.
[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.
[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.
[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

(R. S. 4405, as amended, 4462, as amended; 46 U. S. C. 375, 416. Interprets or applies R. S. 4426, as amended, sec. 5, 49 Stat. 1384, as amended, secs. 1, 2, 49 Stat. 1544, as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 54 Stat. 346, as amended, sec. 2, 54 Stat. 1028, as amended, sec. 3, 68 Stat. 675, sec. 3, 70 Stat. 152, 153; 46 U. S. C. 404, 369, 367, 526p, 1333, 463a, 390b, 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917; 3 CFR, 1952 Supp.)

Subchapter I—Cargo and Miscellaneous Vessels

PART 90—GENERAL PROVISIONS

SUBPART 90.05—APPLICATION

Section 90.05-1 (a) is amended by revising Table 90.05-1 (a) to read as follows:

§ 90.05-1 *Vessels subject to requirements of this subchapter.* (a) * * *

TABLE 90.05-1 (a)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 3 6]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5.[8]
	Vessels over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers.[7] 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, issued a permit to carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.
[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.
[3] Public nautical school ships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.
[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.
[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.
[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.
[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).
[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.
[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

TABLE 90.05-1 (a)—Continued

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 3 9]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Motor	Vessels of not over 15 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers.[7] 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	None, except if required by 46 CFR Part 146.[5]	None.
Non-self-propelled	Vessels not over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges and inland barges when required by 46 CFR Part 146,[5] except those covered by columns 3 and 4.	All barges carrying passengers except those covered by column 4.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.

[3] Public nautical school ships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.

[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

(R. S. 4405, as amended, 4462, as amended; 46 U. S. C. 375, 416. Interprets or applies R. S. 4426, as amended, secs. 1, 2, 49 Stat. 1544, as amended, sec. 17, 54 Stat. 166, sec. 2, 54 Stat. 1028, as amended, sec. 3, 70 Stat. 152, 153, sec. 3, 6, Stat. 675; 46 U. S. C. 404, 367, 526p, 463a, 390b, 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917; 3 CFR, 1952 Supp.)

SUBPART 91.20—INITIAL INSPECTION

Section 91.20-20 (a) is amended by adding a new subparagraph (5), reading as follows:

§ 91.20-20 *Specific tests and inspections.* (a) * * *

(5) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see Part 98 of this subchapter.

SUBPART 91.25—INSPECTION FOR CERTIFICATION

Subpart 91.25 is amended by adding a new § 91.25-37 to follow after § 91.25-35, reading as follows:

§ 91.25-37 *Tanks containing dangerous cargoes.* (a) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see Part 98 of this subchapter.

(R. S. 4405, as amended, 4462, as amended, 46 U. S. C. 375, 416. Interpret or apply R. S. 4399, 4400, 4417, 4418, 4421, 4423, 4426-4431, 4433, 4434, 4453, as amended, sec. 14, 29 Stat. 690, secs. 10, 11, 35 Stat. 428, 41 Stat. 305, 49 Stat. 1544, 1935, as amended, sec. 3, 68 Stat. 675; 46 U. S. C. 361, 362, 391, 392, 399, 400, 404-409, 411, 412, 435, 366, 395, 396, 363, 367, 660a, 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917; 3 CFR, 1952 Supp.)

PART 98—SPECIAL CONSTRUCTION, ARRANGEMENT, AND PROVISIONS FOR CERTAIN DANGEROUS CARGOES IN BULK

Subchapter I is amended by adding a new Part 98, reading as follows:

Subpart 98.01—Application

Sec.
98.01-1 General.
98.01-5 Effective date.

Subpart 98.05—Elemental Phosphorous in Water in Bulk

98.05-1 General.
98.05-5 Types of cargo tanks.
98.05-10 Venting.
98.05-15 Installation.
98.05-20 Openings in tanks.
98.05-25 Outage.
98.05-30 Cargo discharging.
98.05-35 Cargo temperature.
98.05-40 Heating coils.
98.05-45 Void flooding.
98.05-50 General requirements.
98.05-55 Electrical bonding.
98.05-60 Tests and inspections.

Subpart 98.10—Sulfuric Acid in Bulk

98.10-1 General.
98.10-5 How acid may be carried.
98.10-10 Gravity type cargo tanks.
98.10-15 Pressure-vessel type cargo tanks.
98.10-20 Installation.
98.10-25 Openings in tanks.
98.10-30 Cargo piping.
98.10-35 Outage.
98.10-40 Lining.
98.10-45 General requirements.
98.10-50 Tests and inspections.

Subpart 98.15—Hydrochloric Acid in Bulk

98.15-1 General.
98.15-5 How acid may be carried.
98.15-10 Gravity type cargo tanks.
98.15-15 Pressure-vessel type cargo tanks.
98.15-20 Installation.
98.15-25 Openings in tanks.
98.15-30 Cargo piping.
98.15-35 Outage.
98.15-40 Lining.
98.15-45 General requirements.
98.15-50 Tests and inspections.

Subpart 98.20—Liquid Chlorine in Bulk

Sec.
98.20–1 General.
98.20–5 How liquid chlorine may be carried.
98.20–10 Design and construction of cargo tanks.
98.20–15 Markings.
98.20–20 Installation of cargo tanks.
98.20–25 Cargo tanks on barges.
98.20–30 Valves, fittings, and accessories.
98.20–35 Filling and discharge pipes.
98.20–40 Cargo piping.
98.20–45 Safety relief valves.
98.20–50 Filling density.
98.20–55 Venting.
98.20–60 Filling and discharge operation.
98.20–65 Cargo hose.
98.20–70 Special operating requirements.
98.20–75 Tests and inspections.
98.20–80 Stores on board.

Subpart 98.25—Anhydrous Ammonia in Bulk

98.25–1 General.
98.25–5 How anhydrous ammonia may be carried.
98.25–10 Design and construction of cargo tanks.
98.25–15 Markings.
98.25–20 Installation of cargo tanks.
98.25–25 Cargo tank barges.
98.25–30 Lagging.
98.25–35 Refrigerated systems.
98.25–40 Valves, fittings, and accessories.
98.25–45 Liquid level gaging device.
98.25–50 Filling and discharge pipes.
98.25–55 Cargo piping.
98.25–60 Safety relief valves.
98.25–65 Filling density.
98.25–70 Venting.
98.25–75 Ventilation.
98.25–80 Cargo hose.
98.25–85 Electrical bonding.
98.25–90 Special operating requirements.
98.25–95 Tests and inspections.

AUTHORITY: §§ 98.01–1 to 98.25–95 issued under R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.

SUBPART 98.01—APPLICATION

§ 98.01–1 *General.* (a) The provisions of this part shall apply to all vessels which carry in bulk any of the dangerous cargoes specifically noted in this part.

§ 98.01–5 *Effective date.* (a) The provisions in this part which require inspection and certification of vessels shall be in effect on and after January 1, 1959, for new construction and on and after January 1, 1960, for existing vessels. Vessels in existence on January 1, 1959, and vessels contracted for prior to January 1, 1959, which may carry in bulk any of the dangerous cargoes specifically noted in this part shall meet the applicable requirements of this subchapter or Subchapter D (Tank Vessels) of this chapter, as is reasonable and practicable in the opinion of the Officer in Charge, Marine Inspection, to qualify for certification. In this respect the Officer in Charge, Marine Inspection, may grant departures from specific requirements of this chapter if in his opinion the circumstances warrant such departures. In any case the Officer in Charge, Marine Inspection, shall satisfy himself that the vessel and its equipment are in good condition and satisfactory for the purposes intended.

(b) The other provisions of this part shall be in effect on and after July 1, 1958.

SUBPART 98.05—ELEMENTAL PHOSPHORUS IN WATER IN BULK

§ 98.05–1 *General.* (a) Elemental phosphorus, white or yellow, in water may be carried in bulk only in cargo barges, tank barges, or cargo vessels in accordance with the provisions of this subpart.

(b) Any vessel carrying elemental phosphorus in water in bulk shall be inspected and certificated in accordance with the provisions of this subchapter or Subchapter D (Tank Vessels) of this chapter, as applicable.

§ 98.05–5 *Types of cargo tanks.* (a) Tanks in which the vessel's structure forms a part thereof may be employed, provided void spaces are located surrounding the tanks on the sides and bottom.

(b) Tanks independent of the hull either cylindrical or of rectangular design may be employed. The plating of such tanks shall be not less than 5/16 inch thick.

(c) The tanks shall be designed and tested to a head of 8 feet above the tank top or the highest level the lading may rise, whichever is the greater.

(d) When a water displacement method of discharge is used, pressure-vessel type cargo tanks, designed and tested in accordance with Subchapter F (Marine Engineering) of this chapter shall be employed. Such tanks shall be designed for the maximum pressure to which they may be subjected when water pressure is used to discharge the cargo.

§ 98.05–10 *Venting.* (a) Each cargo tank shall be fitted with an approved pressure-vacuum relief valve set to discharge at a pressure not exceeding 2 pounds per square inch. The discharge therefrom shall lead overboard above the waterline. When pressure vessel type tanks are used, each tank shall be fitted with a relief valve of suitable size.

§ 98.05–15 *Installation.* (a) Adequate clearance shall be provided for the inspection and maintenance of independent cargo tanks, or such tanks shall be made movable.

§ 98.05–20 *Openings in tanks.* (a) Openings in tanks are prohibited below deck except for access openings used for inspection and maintenance of tanks. Manholes or access trunks shall be of not less than 20 inches diameter. Openings shall be fitted with bolted cover plates and gaskets resistant to the attack of phosphorus pent oxide.

§ 98.05–25 *Outage.* (a) Sufficient outage shall be provided to prevent the tanks from being liquid full at any time, but in no case shall the outage be less than 1 percent. When pressure vessel type tanks are used outage need not be provided.

§ 98.05–30 *Cargo discharging.* (a) Pumps shall be employed in the discharge of cargo except when pressure vessel type tanks are used, water displacement method may be employed. The use of compressed air to discharge cargo is prohibited.

§ 98.05–35 *Cargo temperature.* (a) Cargo shall be loaded at a temperature not exceeding 140° F., and then cooled until the water above the cargo has a temperature not exceeding 105° F. prior to the movement of the vessel. Upon presentation of satisfactory proof that procedures followed will provide adequate safety in transportation and handling, the Commandant may authorize movement of the vessel following cooling of the water above the cargo to a temperature not exceeding 115° F.

§ 98.05–40 *Heating coils.* (a) Coils in which steam or hot water is circulated to heat the cargo so that it may be pumped shall be located outside the cargo tanks.

§ 98.05–45 *Void flooding.* (a) A fixed ballast piping system (including a power driven pump of ample capacity), or other means acceptable to the Commandant shall be installed so that any void space surrounding the fixed tanks may be flooded.

§ 98.05–50 *General requirements.* (a) All enclosed compartments containing independent cargo tanks and machinery spaces containing cargo pumps for handling liquid phosphorus shall be provided with effective means of ventilation.

(b) Cargo piping shall be of steel or wrought iron. Flanges and pipe fittings shall be of steel or malleable iron. Valves shall be of steel or bronze.

(c) Cargo lines shall be traced with steam piping and secured thereto by lagging to prevent solidification of cargo during transfer operations.

(d) A water hose shall be connected ready for immediate use and any spillage of phosphorus shall be immediately washed down.

(e) At least two fresh air masks or self-contained oxygen breathing apparatus shall be stowed on board the vessel at all times for use of personnel entering the tanks or adjacent spaces.

(f) Authorization from the Commandant (OPL) shall be obtained to transport lading other than phosphorus in the cargo tanks or to have on board any other cargo when phosphorus is laden in the tanks.

(g) Mechanical ventilation of sufficient capacity to insure a change of air every three minutes shall be provided during the inspection and maintenance of the cargo tanks.

(h) During the time elemental phosphorus is laden in the tanks, the barge shall be under constant surveillance. A towing vessel engaged in transporting such barges shall not leave the barge unattended except when the barge is moored at a pier, wharf, dock or other terminal and then only if such facility is provided with watchman or guard service.

(i) The Interstate Commerce Commission standard "Dangerous" placard shall be displayed in four locations on the barge when elemental phosphorus is laden in the tanks. A placard shall be posted approximately amid ships on each side facing outboard, and a placard shall

be posted at each end of the barge at about the end of the tanks facing outboard. After unloading and before a tank or tanks are cleaned, the placard shall be reversed to show the "Dangerous—Empty" legend.

§ 98.05-55 *Electrical bonding.* (a) Independent cargo tanks shall be electrically grounded to the hull. The barge shall be electrically connected to the shore piping prior to connecting the cargo hose. This electrical connection shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

§ 98.05-60 *Tests and inspections.* (a) Each gravity tank shall be tested before being put into service as prescribed in § 98.05-5 (c).

(b) Tanks shall be retested as prescribed in § 98.05-5 eight years after being placed into service and at each four-year interval thereafter, as well as before being returned to service after extensive repairs.

SUBPART 98.10—SULFURIC ACID IN BULK

§ 98.10-1 *General.* (a) Sulfuric acid or spent sulfuric acid may be carried in bulk only in cargo barges, tank barges, or cargo vessels in accordance with the provisions of this subpart.

(b) Any vessel carrying sulfuric acid or spent sulfuric acid in bulk shall be inspected and certificated in accordance with the provisions of this subchapter or Subchapter D (Tank Vessels) of this chapter, as applicable.

§ 98.10-5 *How acid may be carried.* (a) Sulfuric acid of concentration of 77.5 percent (1.7019 specific gravity) (59.8° Baume) or greater concentrations with or without an inhibitor, provided the corrosive effect on steel measured at 100° F. is not greater than that of 66° Baume commercial sulfuric acid, may be transported in unlined gravity type cargo tanks or unlined pressure-vessel type cargo tanks.

(b) Sulfuric acid of concentration of 65.25 percent (1.559 specific gravity) (52° Baume) or greater concentrations, provided the corrosive effect on steel measured at 100° F. is not greater than that of 52° Baume commercial sulfuric acid, may be transported in unlined pressure-vessel type cargo tanks independent of the vessel's structure.

(c) Sulfuric acid of concentration not to exceed 65.25 percent (1.559 specific gravity) (52° Baume) may be transported in gravity type cargo tanks or pressure-vessel type cargo tanks which are lined with lead or other equally suitable acid-resistant material acceptable to the Commandant.

(d) Sulfuric acid of concentration not to exceed 51 percent (1.408 specific gravity) (42° Baume) and spent sulfuric acid resulting from the use of sulfuric acid in industrial processes may be transported in gravity type cargo tanks which are lined with rubber or other equally suitable acid-resistant material acceptable to the Commandant.

§ 98.10-10 *Gravity type cargo tanks.* (a) Gravity type cargo tanks shall be designed and tested to meet the rules of the American Bureau of Shipping for a head of water at least 8 feet above the tank top or the highest level the lading may rise, whichever is the greater. The plate thickness of any part of the tank shall not be less than ⅜ inch. Such tanks may form an integral part of the ship's structure, or may be independent of the ship's structure, or form a part thereof.

(b) Gravity type tanks shall be vented to atmosphere. A vent shall be fitted having a cross-sectional area of not less than that of the filling line unless an ullage opening is provided having a cross-sectional area at least equal to that of the filling line. The minimum size of a cargo tank vent shall be not less than 2½ inches. The outlet end of the vent shall terminate above the weather deck, clear of all obstructions and away from any source of flame. The vent shall terminate in a gooseneck bend and shall be fitted with a single flame screen of at least 30 x 30 mesh; or two screens of at least 20 x 20 mesh, not less than 1 inch nor more than 1½ inches apart. The flame screens shall be corrosion-resistant wire. No shut-off valve or frangible disc shall be fitted in the vent lines.

(c) Compressed air shall not be used to discharge cargo from gravity type cargo tanks.

§ 98.10-15 *Pressure-vessel type cargo tanks.* (a) Pressure-vessel type tanks shall be independent of the vessel's structure and shall be designed for the maximum pressure to which they may be subjected when compressed air is used to discharge the cargo, but in no case shall the design pressure be less than 50 pounds per square inch.

(b) Pressure-vessel type cargo tanks shall be designed as Class II or Class III unfired arc-welded cylindrical pressure vessels, inspected and tested as required by Subchapter F (Marine Engineering) of this chapter.

(c) Tanks designed, inspected, and tested as required by Interstate Commerce Commission Specification 103A, 103A-W, 103B, or 103B-W will be accepted as pressure-vessel type cargo tanks, provided the maximum pressure to which the tanks may be subjected does not exceed 30 pounds per square inch, and provided that prior to installing such tanks on a barge or cargo vessel, the owner shall furnish the Commandant with a copy of the inspection report certifying that the tanks and appurtenances comply with Interstate Commerce Commission specifications.

(d) When compressed air is used to discharge the cargo, the tank shall be fitted with a vent led to atmosphere in which shall be installed a rupture disc. The rupture disc shall be designed to burst at a pressure not exceeding the design pressure of the tank. An auxiliary vent to relieve the pressure or vacuum in the tank during filling or discharge of the cargo may be led from the vent line between the tank and the rupture disc. A shut-off valve may be fitted in the auxiliary vent.

(e) Except as otherwise specified in this section, the vents shall conform to the requirements of § 98.10-10 (b).

§ 98.10-20 *Installation.* (a) Adequate clearance shall be provided for the inspection and maintenance of independent cargo tanks, or such tanks shall be made movable.

§ 98.10-25 *Openings in tanks.* (a) Openings in tanks are prohibited below deck, except for access openings used for inspection and maintenance of tanks, or unless otherwise specifically approved by the Commandant. Openings shall be fitted with bolted cover plates and acid-resistant gaskets.

§ 98.10-30 *Cargo piping.* (a) Where special arrangements are approved by the Commandant to permit a pump suction to be led from the bottom of the tank, the filling and discharge lines shall be fitted with shut-off valves located above the weather deck or operable therefrom.

§ 98.10-35 *Outage.* (a) Sufficient outage shall be provided to prevent the tanks from being liquid full at any time, but in no case shall the outage be less than 1 percent.

§ 98.10-40 *Lining.* (a) The interior surfaces of cargo tanks shall be made smooth, welds chipped or ground smooth, and the surfaces thoroughly cleaned before the lining is applied. All interior surfaces of the tanks shall be maintained free from scale, oxidation, moisture and all foreign matter during the lining process.

(b) The material used for lining or coating the tanks shall be resistive to attack by the sulfuric acid to be carried; homogeneous, nonporous, and imperforate when applied; and not less elastic than the metal of the tank proper. It shall be of substantially uniform thickness, not less than 5/32 inch for lead lining, and not less than 3/16 inch for rubber lining. The lining shall be directly bonded to the tank plating, or attached by other satisfactory means acceptable to the Commandant.

(c) Rubber lining shall be scarfed at the joints to overlap at least 1½ inches, and the faying surfaces shall be beveled to an angle of approximately 45° with vulcanizing being done in place.

(d) Cargo piping, including valves, fittings, and flanges, when subject to the corrosive attack of the acid, shall be lined or coated with corrosion-resistant material. Vent piping, including flanges and fittings, shall be similarly lined or coated at least to the height of the frangible disc, if such is installed.

§ 98.10-45 *General requirements.* (a) All enclosed compartments containing sulfuric acid cargo tanks and all machinery spaces containing cargo pumps for handling sulfuric acid shall be fitted with effective means of ventilation.

(b) Cargo pumps, piping, valves, fittings, and flanges used in the handling of sulfuric acid cargo shall be made of material resistive to attack by the sulfuric acid to be carried, or shall be suitably protected against such corrosive attack.

(c) A separator shall be fitted in compressed air lines to the tank when air pressure is used to discharge the cargo.

(d) The use of naked lights and artificial lights, other than electric lights or portable battery lights, is prohibited during the filling and discharge operations. Smoking is prohibited and the master or officer in charge of the vessel shall post "No Smoking" signs during filling and discharging operations. All tools used in the loading or unloading operations shall be of the nonsparking type. Fire or other naked lights shall not be applied to any tank for the purpose of liquefying congealed sulfuric acid. Heating coils will only be permitted as a means of liquefying frozen or congealed sulfuric acid.

(e) A water hose shall be connected ready for immediate use and any leakage or spillage of acid shall be immediately washed down.

(f) Tanks approved for the transportation of sulfuric acid in bulk shall not be used for the transportation of any other commodity, except upon authorization by the Commandant (OPL).

§ 98.10–50 *Tests and inspections.* (a) Each gravity type cargo tank shall be tested before being put into service as prescribed in § 98.10–10 (a).

(b) Unlined gravity type cargo tanks shall be retested as prescribed in § 98.10–10 (a) eight years after being placed into service and at each four year interval thereafter, as well as before being returned to service after extensive repairs.

(c) Unlined pressure-vessel type cargo tanks shall be subjected to a hydrostatic pressure of one and one-half times the design pressure at any time the marine inspector considers such hydrostatic tests necessary to determine the condition of the tanks.

(d) Each cargo tank shall be subjected to an internal examination at least once in every four years. Where the lining of a cargo tank has deteriorated in service or is not in place, the marine inspector may require such tank to be subjected to the prescribed hydrostatic test if deemed necessary to determine the condition of the tank.

SUBPART 98.15—HYDROCHLORIC ACID IN BULK

§ 98.15–1 *General.* (a) Hydrochloric acid may be carried in bulk in cargo barges, tank barges, or cargo vessels in accordance with the provisions of this subpart.

(b) Any vessel carrying hydrochloric acid in bulk shall be inspected and certificated in accordance with the provisions of this subchapter or Subchapter D (Tank Vessels) of this chapter as applicable.

§ 98.15–5 *How acid may be carried.* (a) Hydrochloric acid shall be carried in gravity or pressure type cargo tanks which are independent of the vessel's structure provided such tanks are lined with rubber or other equally suitable material acceptable to the Commandant.

§ 98.15–10 *Gravity type cargo tanks.* (a) Gravity type cargo tanks shall be designed and tested to meet the rules of the American Bureau of Shipping for a head of water at least 8 feet above the tank top or the highest level the lading may rise, whichever is the greater. The plate thickness of any part of the tank shall not be less than $\frac{3}{8}$ inch. Such tanks shall be independent of the vessel's structure.

(b) Gravity type tanks shall be vented to atmosphere. A vent shall be fitted having a cross-sectional area of not less than that of the filling line unless an ullage opening is provided having a cross-sectional area at least equal to that of the filling line. The minimum size of a cargo tank vent shall not be less than 2½ inches. The outlet end of the vent shall terminate above the weather deck, clear of all obstructions and away from any source of flame. The vent shall terminate in a gooseneck bend and shall be fitted with a single flame screen of at least 30 x 30 mesh; or two screens of at least 20 x 20 mesh, not less than 1 inch nor more than 1½ inches apart. The flame screens shall be of corrosion-resistant wire. No shut-off valve or frangible disc shall be fitted in the vent lines.

(c) Compressed air shall not be used to discharge cargo from gravity type cargo tanks.

§ 98.15–15 *Pressure-vessel type cargo tanks.* (a) Pressure-vessel type cargo tanks shall be independent of the vessel's structure and shall be designed for the maximum pressure to which they may be subjected when compressed air is used to discharge the cargo, but in no case shall the design pressure be less than 50 pounds per square inch.

(b) Pressure-vessel type cargo tanks shall be designed as Class II or Class III unfired arc-welded cylindrical pressure vessels, inspected and tested as required by Subchapter F (Marine Engineering) of this chapter.

(c) Tanks designed, inspected and tested as required by Interstate Commerce Commission Specification 103B or 103B–W will be accepted as pressure-vessel type cargo tanks: *Provided,* That the maximum pressure to which the tanks may be subjected does not exceed 30 pounds per square inch, and: *Provided further,* That prior to installing such tanks on a barge or cargo vessel, the owner shall furnish the Commandant with a copy of the inspection report certifying that the tanks and appurtenances comply with Interstate Commerce Commission specifications.

(d) When compressed air is used to discharge the cargo, the tank shall be fitted with a vent led to atmosphere in which shall be installed a rupture disc. The rupture disc shall be designed to burst at a pressure not exceeding the design pressure of the tank. An auxiliary vent to relieve the pressure or vacuum in the tank during filling or discharge of the cargo may be led from the vent line between the tank and the rupture disc. A shut-off valve may be fitted in the auxiliary vent.

(e) Except as otherwise specified in this section, the vent shall conform to the requirements of § 98.15–10 (b).

§ 98.15–20 *Installation.* (a) Adequate clearance shall be provided for the inspection and maintenance of the tanks, or such tanks shall be made movable.

§ 98.15–25 *Openings in tanks.* (a) Openings in tanks are prohibited below deck, except for access openings used for inspection and maintenance of tanks, or unless otherwise specifically approved by the Commandant. Openings shall be fitted with bolted cover plates and acid-resistant gaskets.

§ 98.15–30 *Cargo piping.* (a) Where special arrangements are approved by the Commandant to permit a pump suction to be led from the bottom of the tank, the filling and discharge lines shall be fitted with shut-off valves located above the weather deck or operable therefrom.

§ 98.15–35 *Outage.* (a) Sufficient outage shall be provided to prevent the tanks from being liquid full at any time, but in no case shall the outage be less than 1 percent.

§ 98.15–40 *Lining.* (a) The interior surfaces of cargo tanks shall be made smooth, welds chipped or ground smooth, and the surfaces thoroughly cleaned before the lining is applied. All interior surfaces of the tanks shall be maintained free from scale, oxidation, moisture and all foreign matter during the lining process.

(b) The rubber or other approved lining material shall be resistive to attack by hydrochloric acid; homogeneous, nonporous, and imperforate when applied; and not less elastic than the metal of the tank proper. It shall be of substantially uniform thickness, not less than ¼ inch for rubber lining. The lining shall be directly bonded to the tank plating, or attached by other satisfactory means acceptable to the Commandant.

(c) Rubber lining shall be scarfed at the joints to overlap at least 1½ inches, and the faying surfaces shall be beveled to an angle of approximately 45 degrees with vulcanizing being done in place.

(d) Cargo piping, including valves, fittings, and flanges, when subject to the corrosive attack of the acid, shall be rubber-lined or coated with other corrosion-resistant material. Vent piping, including flanges and fittings, shall be similarly lined or coated at least to the height of the frangible disc if such is installed.

§ 98.15–45 *General requirements.* (a) All enclosed compartments containing hydrochloric acid cargo tanks and all machinery spaces containing cargo pumps for handling hydrochloric acid shall be fitted with effective means of ventilation.

(b) Cargo pumps, piping, valves, fittings, and flanges used in the handling of hydrochloric acid cargo shall be made of material resistive to attack by hydrochloric acid, or shall be suitably protected against such corrosive attack.

(c) A separator shall be fitted in compressed air lines to the tank when air pressure is used to discharge the cargo.

(d) The use of naked lights and artificial lights, other than electric lights or portable battery lights, is prohibited during the filling and discharging operations. Smoking is prohibited and the master or officer in charge of the vessel shall post "No Smoking" signs during filling and discharging operations. All

tools used in the loading or unloading operations shall be of the nonsparking type.

(e) A water hose shall be connected ready for immediate use and any leakage or spillage of acid shall be immediately washed down.

(f) Tanks approved for the transportation of hydrochloric acid shall not be used for the transportation of any other commodity, except upon authorization by the Commandant (OPL).

(g) Spent hydrochloric acid or hydrochloric acid adulterated by other chemicals, inhibitors, oils, solvents, water, etc., shall not be transported in bulk cargo tanks except upon authorization by the Commandant (OPL).

§ 98.15–50 *Tests and inspections.* (a) Each gravity type cargo tank shall be tested before being placed into service as prescribed in § 98.15–10 (a).

(b) Each cargo tank shall be subjected to an internal examination at least once in every four years. Where the lining of the cargo tank has deteriorated in service or is not in place, the marine inspector may require such tank to be subjected to the prescribed hydrostatic test if deemed necessary to determine the condition of the tanks.

SUBPART 98.20—LIQUID CHLORINE IN BULK

§ 98.20–1 *General.* (a) Liquid chlorine may be carried in bulk in steel tank barges or steel cargo barges in accordance with the provisions of this subpart.

(b) Any barge carrying liquid chlorine in bulk shall be inspected and certificated in accordance with the provisions of this subchapter or Subchapter D (Tank Vessels) of this chapter, as applicable.

§ 98.20–5 *How liquid chlorine may be carried.* (a) Liquid chlorine shall be carried in unfired pressure vessel type tanks independent of the structure of the vessel.

§ 98.20–10 *Design and construction of cargo tanks.* (a) The cargo tanks shall meet the requirements of Class I arc-welded unfired pressure vessels and shall be fabricated, inspected and tested in accordance with the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) Tanks shall be designed for a pressure of not less than 300 pounds per square inch. For the maximum allowable pressure of tanks in service see § 98.20–75 (c).

(c) Each tank shall be provided with 15 x 18-inch or 18-inch minimum diameter manhole, fitted with a cover located above the maximum liquid level and as close as possible to the top of the tank.

§ 98.20–15 *Markings.* (a) Upon satisfactory completion of tests and inspection, the following markings at least ⅜ inch high shall be stamped into a noncorrodible plate permanently attached to the tank by welding.

(Name and address of fabricator)

---- p. s. i. ---- p. s. i.
(Design pressure) (Shop test pressure)

(Inspector's number, initials and CG symbol)

(Manufacturer's serial number)

---- ---- U. S. gallons
(Date of manufacture) (Water capacity)

(b) In addition to the markings required to be stamped on the tank, the legend "chlorine" shall be conspicuously and legibly marked upon the dome or upper portion of the tank in letters at least 4 inches high.

(c) All tank inlet and outlet connections, except safety relief valves shall be labeled to designate whether they terminate in the vapor or liquid space. Labels of noncorrodible material may be attached to the valves.

(d) All tank markings shall be permanently and legibly stamped in a readily visible position.

§ 98.20–20 *Installation of cargo tanks.* (a) Independent tanks shall be arranged in the barge so as to provide a minimum clearance of not less than 24 inches from the barge side and not less than 15 inches from the barge bottom. Where more than one tank is installed in a barge, the distance between such tanks shall not be less than 15 inches, unless otherwise approved by the Commandant. Alternate provisions may be made for moving such tanks to provide for adequate inspection and maintenance of barge structure and the tanks.

(b) The design shall show the manner in which the tanks are to be installed, supported, and secured on board the barge and shall be approved prior to the installation. Tanks shall be supported in steel saddles and securely anchored in place. No appendages shall be welded to the tanks after they have been stress-relieved unless authorized by the Commandant.

(c) Tanks may be installed "on deck" or "under deck" with the tank protruding above deck. On installations where a portion of the tank extends above the weather deck, provision shall be made to maintain the weather tightness of the deck, except that barges operating on protected inland waters may have tanks located in the holds of hopper type barges without water-tightness of the deck being maintained. All tanks shall be installed with the manhole opening and fittings located above the weather deck.

(d) The hold or holds in which tanks are located "under deck" shall be provided with mechanical ventilation of sufficient capacity to assure a change of air every 3 minutes.

§ 98.20–25 *Cargo tanks on barges.* (a) Sides of tank barges shall be fitted with suitable guards as added precaution against the cargo tanks being damaged as a result of collision.

§ 98.20–30 *Valves, fittings, and accessories.* (a) All valves, flanges, fittings and accessory equipment shall be of a type suitable for use with chlorine and shall be made of forged steel, cast steel, or nonferrous metal corrosion resistant to chlorine in either the gas or liquid phase. Valves, flanges and fittings shall be of the square or round tongue and groove type or of raised face, American Standard Association 300-pound standard minimum, fitted with sheet lead or other suitable gasket material. Welding fittings shall be used wherever possible, and the number of pipe joints held to a minimum. Screwed joints in cargo lines and vapor lines are prohibited in sizes above 1 inch.

(b) Each tank shall be provided with the necessary fill and discharge liquid and vapor shut-off valves, and safety relief valves, which shall be grouped in the smallest practicable space and shall be protected against mechanical damage by a suitable protective metal housing. Other openings in tanks are prohibited. A drain connection shall be provided from the protective housing and led overboard just above deepest load line.

(c) All liquid and vapor connections to the tanks, except safety relief valves, shall have manually operated shut-off valves located as close to the tank as practicable.

(d) Excess flow valves, where required by this subpart, shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The piping, including valves, fittings, and appurtenances, protected by excess flow valves shall have a greater capacity than the rated flow of the excess flow valve.

(e) Liquid level gaging devices of any type are prohibited on chlorine tanks.

(f) A pressure gage shall be attached to the vapor shut-off valve or vapor line so as to indicate the pressure in the tank at all times during loading and unloading.

(g) Excess flow valves shall be located on the inside of the tank. Back pressure check valves may be located on the inside of the tank or on the outside where the piping enters the tank. When installed on the outside, installation shall be in such a manner that any undue strain will not cause breakage between the tank and the back pressure check valve.

(h) Excess flow valves may be designed with a bypass, not to exceed No. 60 drill size opening, to allow for equalization of pressure.

§ 98.20–35 *Filling and discharge pipes.* (a) Filling connections shall be provided with one of the following:

(1) Combination back pressure check valve and excess flow valve;

(2) One double or two single back pressure check valves; or

(3) A positive shut-off valve in conjunction with either an internal back pressure check valve or an internal excess flow valve.

(b) All other liquid and vapor connections to tanks, except filling connections and safety relief valves, shall be equipped with automatic excess flow valves.

§ 98.20–40 *Cargo piping.* (a) Piping shall be of seamless drawn black steel of a thickness of not less than schedule 80.

(b) Piping shall be provided with adequate support to take the weight of the piping off the valves and fittings. Where necessary, provision shall be made for expansion and contraction of piping by

means of seamless steel pipe expansion bends. Slip-type expansion joints are prohibited.

(c) In multiple tank installations the tanks shall not be interconnected by piping or manifolds. More than one cargo tank may be filled or discharged at a time, provided each tank is filled from or discharged to shore tanks through separate lines.

§ 98.20–45 *Safety relief valves.* (a) Each tank shall be fitted with one or more approved safety relief valves, designed, constructed, and flow tested for capacity in conformance with Subpart 162.018 in Subchapter Q (Specifications) of this chapter. The safety valve requirements in this section are based on unlagged tanks. On lagged tanks, the Commandant will give special consideration to safety valves proposed to be used.

(b) Each safety relief valve shall be set to pop at a pressure not in excess of the maximum allowable pressure of the tank and shall be vapor tight at a pressure of not less than 80 percent of the maximum allowable pressure.

(c) The safety relief valve(s) shall have a relieving capacity sufficient to prevent a rise of pressure in the tank of more than 20 percent above the maximum allowable pressure when the safety relief valve(s) are blowing.

(d) The minimum rates of discharge of safety relief valves used on unlagged tanks shall be not less than determined by the following formula:

$$Q = 53.526A^{0.82} \qquad (1)$$

where:

Q = minimum required rate of discharge, in cubic feet per minute, of standard air at 120 percent of the maximum set pressure of the safety relief valve. Discharge measured at 60° F. and atmospheric pressure (14.7 p. s. i. a.).

A = total external surface area of the tank, in square feet. $\pi(D \times U)$, for cylindrical tank with hemispherical heads. $\pi D(U+0.3D)$, for cylindrical tank with spherically dished or semi-ellipsoidal heads. πD^2, for spherical tank.

D = outside diameter of the tank, in feet.

U = external overall length of the tank, in feet.

(e) Safety relief valve(s) shall be attached to the tank near the highest point of the vapor space. Shut-off valves shall not be installed between the tanks and the safety relief valve(s).

(f) Each safety relief valve shall be tested in the presence of an inspector before or after mounting prior to being placed in service. The test shall prove that the safety valve will start to discharge at a pressure not in excess of the maximum allowable pressure of the tank. (For periodic tests see § 98.20–75 (c).)

§ 98.20–50 *Filling density.* (a) The filling density, or the percent ratio of the liquefied gas that may be loaded into the tank to the weight of water the tank will hold at 60° F., shall not exceed 125 percent.

§ 98.20–55 *Venting.* (a) Cargo tanks of tank barges shall have the safety relief valve outlets connected to individual or common risers which shall extend to a reasonable height above the deck, or, the safety relief valve escape may be led to a common discharge header. Where the escape of vapors from the venting system may interfere with towing operations or the operation of the barge in inland waters would be a hazard to installations extending above deck, an installation acceptable to the Commandant may be used. This arrangement shall be such as to minimize the hazard of escaping vapors.

(b) The capacity of branch vents or vent headers shall depend upon the number of cargo tanks connected to such branch or header as provided in Table 98.20–55 (b).

TABLE 98.20–55 (b)—CAPACITY OF BRANCH VENTS OR VENT HEADERS

Number cargo tanks:	*Percent total valve discharge*
1 or 2	100
3	90
4	80
5	70
6 or more	60

(c) Return bends and restrictive pipe fittings are prohibited. Vents and headers shall be so installed as to prevent stresses on safety relief valve mountings.

(d) When vent discharge risers are installed, they shall be so located as to provide protection against physical damage and be fitted with loose raincaps.

(e) Suitable provision shall be made for draining the vent escape piping if liquid can collect therein.

§ 98.20–60 *Filling and discharge operation.* (a) The maximum amount of liquid chlorine that may be loaded into the cargo tanks shall be determined by weight and shall not exceed the filling density specified in § 98.20–50. Any chlorine vapors vented during the filling operation shall be disregarded when calculating the maximum amount of chlorine to be loaded into the cargo tanks.

(b) Prior to the start of filling operations, care shall be exercised to insure that the cargo tank(s) is empty and free from foreign matter. After all pipe connections and fittings are made tight, the cargo tank(s) shall be evacuated to at least 20 inches of mercury.

(c) The chlorine shall be loaded through a direct pipe line from the shore tank that is mounted on scales so that an amount of chlorine predetermined by weight is loaded into the cargo tank(s) on board the barge.

(d) After the filling operation is completed the vapor above the liquid chlorine in the cargo tank shall be analyzed to determine the percentage of gaseous chlorine in the vapor space. If it should contain less than 80 percent chlorine, vapors shall be withdrawn through the vent or vapor line until the vapor content in the cargo tanks show at least 80 percent chlorine.

(e) After filling connections are removed, upon completion of the loading of a cargo tank, all connections at the tank shall be tested for leakage of chlorine by the aqua ammonia method.

(f) The chlorine in the cargo tanks shall be discharged by the pressure differential method. Where the vapor pressure of the chlorine is not sufficient to force the liquid out of the tank, compressed air may be used to secure the desired rate of discharge, provided the air is oil-free and thoroughly dried by passing it over activated aluminum oxide, silica gel, or other acceptably drying agent. The compressed air system shall contain a relief valve arranged and set so that the air pressure in the cargo tank cannot exceed 70 percent of the allowable pressure of the tank.

(g) After completion of the filling or discharge operations, the excess liquid chlorine in the cargo piping shall be removed. The filling and discharge piping shall be disconnected at the cargo tanks, except during filling and discharge operations. After disconnecting the cargo piping, both ends of the line shall be closed and all inlet and outlet valves on the tank shall be plugged or fitted with blind flanges.

(h) Plans showing alternate methods of filling and discharging the lading may be submitted for approval.

§ 98.20–65 *Cargo hose.* (a) Cargo hose fabricated of Schedule 80 seamless black steel pipe, or corrosion resistant metallic pipe not subject to deterioration by chlorine, having metallic flexible joints, or other types of flexible metallic hose acceptable to the Commandant, shall be fitted to the liquid or vapor lines during filling and discharging of the cargo tanks.

(b) Cargo hose subject to tank pressure shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tanks.

(c) Before being placed in service, each new cargo hose, with all necessary fittings attached, shall be hydrostatically tested by the manufacturer to a pressure of not less than twice the maximum pressure to which it may be subjected in service. The hose shall be marked with the maximum pressure guaranteed by the manufacturer.

§ 98.20–70 *Special operating requirements.* (a) Repairs involving welding or burning shall not be undertaken on the tanks or piping while chlorine in either liquid or vapor state is present in the system.

(b) During the time chlorine is laden in the tanks the barge shall be under constant surveillance. A towing vessel engaged in towing such barges shall not leave the barge unattended except when the barge is moored at a pier, wharf, dock, or other terminal, and then only if such facility is provided with watchman or guard service. When the barge is at the consignor's or consignee's terminal, watchman or guard service shall be provided by said consignor or consignee.

(c) The Interstate Commerce Commission's standard "Dangerous" placard shall be displayed in four locations on the barge when chlorine is laden in the tanks. A placard shall be posted approximately amidships on each side and facing outboard. A placard shall also be posted on each end of the barge at about the ends of the tanks facing outboard. Racks for mounting such placards shall be so arranged as to provide clear visibility and be protected from

becoming readily damaged or obscured. After unloading and before a tank or tanks are gas-freed, the placard shall be reversed to show the "Dangerous—Empty" legend.

(d) At least two units of self-contained oxygen breathing apparatus shall be carried on board the barge at all times. One unit shall be stowed forward of the cargo tanks and one unit aft of the cargo tanks.

(e) Unless authorized by the Commandant (OPL), no other kind of cargo except liquid caustic soda shall be on board a barge at the same time that chlorine in liquid or vapor state is present in a cargo tank. Chlorine tanks shall not be installed within caustic soda tanks.

(f) Authorization from the Commandant (OPL) shall be obtained to transport lading other than chlorine in tanks of this service.

§ 98.20–75 *Tests and inspections.* (a) Each cargo tank shall be subjected to an internal and external examination biennially.

(b) Each cargo tank shall be subjected to hydrostatic test biennially of one and one-half times the maximum allowable pressure as determined by the safety relief valve setting.

(c) When periodic inspection indicates that a cargo tank has deteriorated in service, the maximum allowable pressure shall be recalculated, using the minimum thickness found by actual measurement. The recalculated maximum allowable pressure shall be not less than 275 pounds per square inch; otherwise, the cargo tanks shall be withdrawn from service.

(d) The safety relief valves shall be popped in the presence of an inspector by use of water, compressed air, or inert compressed gas at the time of the biennial inspection, or at such time as may be required by the inspector to determine the accuracy of adjustment; and, if necessary, such valves shall be repaired and reset.

§ 98.20–80 *Stores on board.* (a) The following substances shall not be used as stores on board barges transporting chlorine in bulk: Hydrogen, methane, liquefied petroleum gases, coal gas, acetylene, ammonia, turpentine, compounds containing metallic powders, finely divided metals or finely divided organic materials.

SUBPART 98.25—ANHYDROUS AMMONIA IN BULK

§ 98.25–1 *General.* (a) Anhydrous ammonia may be carried in bulk in cargo barges, tank barges, or cargo vessels in accordance with the provisions of this subpart.

(b) Any vessel carrying anhydrous ammonia in bulk shall be inspected and certificated in accordance with the provisions of this subchapter or Subchapter D (Tank Vessels) of this chapter as applicable.

§ 98.25–5 *How anhydrous ammonia may be carried.* (a) Anhydrous ammonia shall be carried in unfired pressure vessel type tanks independent of the structure of the vessel, except as provided otherwise in this subpart.

§ 98.25–10 *Design and construction of cargo tanks.* (a) The cargo tanks shall meet the requirements for Class I or Class II arc-welded unfired pressure vessels and shall be fabricated, inspected and tested in accordance with the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) Unlagged cargo tanks subject to atmospheric temperatures shall be designed for a pressure of not less than 250 pounds per square inch gage.

(c) Where unrefrigerated cargo tanks are lagged as required by §§ 98.25–30 and 98.25–60, the tanks shall be designed for a pressure of not less than 215 pounds per square inch gage.

(d) Refrigerated cargo tanks, in which the temperature of the liquid ammonia is maintained below the normal atmospheric temperatures, shall be designed for a pressure of not less than the vapor pressure corresponding to the temperature of the liquid at which the system is to be maintained, plus 25 pounds per square inch gage, but in no instance shall the design pressure be less than 90 pounds per square inch.

(e) Each tank shall be provided with not less than a 15" x 18" diameter manhole, fitted with a cover located above the maximum liquid level and as close as possible to the top of the tank. Where access trunks are fitted to tanks, the diameter of the trunks shall be not less than 30 inches.

§ 98.25–15 *Markings.* (a) Upon satisfactory completion of tests and inspection, the following marking, at least ⅜ inch high, shall be stamped into a noncorrodible nameplate permanently attached to the tank by means of welding.

(Name and address of fabricator)
---- p. s. i. ---- p. s. i.
(Design pressure) (Shop test pressure)

(Manufacturer's serial number)

---- U. S. gallons
(Water capacity)

(Date of manufacture)

(b) In addition to the markings required to be stamped on the tank, the legend, "Anhydrous Ammonia" shall be conspicuously and legibly marked upon the dome or upper portion of the tank in letters at least 4 inches high.

(c) All tank inlet and outlet connections, except safety relief valves, liquid level gaging devices, and pressure gages shall be labeled to designate whether they terminate in the vapor or liquid space. Labels of noncorrosive material may be attached to valves.

(d) All tank markings shall be permanently and legibly stamped in a readily visible position. If the tanks are lagged, the markings attached to the tank proper shall be duplicated on a corrosion resistant plate secured to the outside jacket of the lagging.

§ 98.25–20 *Installation of cargo tanks.* (a) Independent tanks shall be arranged in the barge or vessel so as to provide a minimum clearance of not less than 24 inches from the vessel's side and not less than 15 inches from the vessel's bottom. Where more than one tank is installed in a vessel, the distance between such tanks shall be not less than 15 inches, unless otherwise approved by the Commandant. Alternate provisions may be made for moving such tanks to provide for adequate inspection and maintenance of the vessel's structure and the tanks.

(b) The design shall show the manner in which the tanks are to be installed, supported, and secured in the barge or vessel and shall be approved prior to installation. Tanks shall be supported in steel saddles and securely anchored in place. If the tanks are required to be stress-relieved no appendages shall be welded to the tanks after they have been stress-relieved unless authorized by the Commandant.

(c) Tanks may be located in dry cargo holds or in liquid cargo tanks or may be installed "on deck" or "under deck" with the tank protruding above deck. On installations where a portion of the tank extends above the weather deck, provision shall be made to maintain the weathertightness of the deck, except that vessels operating on protected inland waters may have tanks located in the holds of hopper type barges without the watertightness of the deck being maintained. All tanks shall be installed with the manhole opening and fittings located above the weather deck.

(d) The anhydrous ammonia tanks may be installed in the bulk liquid cargo tanks provided the liquid surrounding the enclosed anhydrous ammonia tanks complies with the following chemical and physical properties:

(1) Boiling point above 125° F. at atmospheric pressure.

(2) Inert to ammonia at 100° F. at atmospheric pressure.

(3) Noncorrosive in the liquid and vapor phase to the ammonia tanks and piping.

§ 98.25–25 *Cargo tank barges.* (a) Tanks having a cargo capacity of not more than 60,000 gallons may form part of the structure of a barge where adequate provision is made to prevent damage to tanks in the event of collision or grounding.

(b) Sides of tank barges shall be fitted with suitable guards as an added precaution against the cargo tanks being damaged as a result of collision.

§ 98.25–30 *Lagging.* (a) Lagged tanks shall be covered with an incombustible insulation material of a thickness to provide a thermal conductance of not more than 0.075 B. t. u. per square foot per degree F. differential in temperature per hour. The insulating material shall be of an approved type complying with the requirements of Subpart 164.009 of Subchapter Q (Specifications) of this chapter, and shall be given a vapor proof coating with fire retardant material acceptable to the Commandant. Tanks exposed to the weather shall have the insulation and vapor proof coating covered with a removable sheet metal jacket of not less than 0.083 inch thickness and flashed around all openings so as to be weather tight. Materials other than sheet metal may be used to cover the insulation and vapor proof coating when

specifically authorized by the Commandant.

(b) Where unlagged tanks are installed in insulated holds or insulated 'tween deck spaces, such tanks shall be considered lagged provided the thermal conductance of the insulation is not less than that required by paragraph (a) of this section.

§ 98.25–35 *Refrigerated systems.* (a) Where refrigerated systems are installed to maintain the temperature of the liquid below atmospheric, at least two complete refrigeration plants automatically regulated by pressure variations within the tanks shall be provided, each to be complete with the necessary auxiliaries for proper operation. The capacity of each refrigeration compressor shall be sufficient to maintain the vapor pressure in the tanks during the peak atmospheric temperature conditions below the pressure for which the tanks are designed.

(b) An alternate arrangement may consist of three compressors, any two of which shall be capable of maintaining the vapor pressure in the tanks during peak atmospheric temperature conditions below the pressure for which the tanks are designed, the third compressor acting as a stand-by unit.

(c) Refrigerated tanks shall be insulated in conformance with the requirements of § 98.25–30.

§ 98.25–40 *Valves, fittings, and accessories.* (a) All valves, flanges, fittings, and accessory equipment shall be of a type suitable for use with anhydrous ammonia and shall be made of steel, or Grade A malleable iron conforming to the requirements of Part 51 of Subchapter F (Marine Engineering) of this chapter. Valves shall be fitted with noncorrosive material suitable for ammonia service. Valves, flanges, and pipe fittings shall be of the square or round tongue and groove type or raised-face American Standard Association 300-pound standard minimum fitted with suitable soft gasket material. Welded fittings shall be used wherever possible, and the number of pipe joints shall be held to a minimum. Screwed joints are not permitted for pipe diameters exceeding two inches. Nonferrous materials, such as copper, copper alloys, and aluminum alloys shall not be used in the construction of valves, fittings, or accessory equipment. Brazed joints are prohibited.

(b) Each tank shall be provided with the necessary fill and discharge liquid and vapor shut-off valves, safety relief valves, liquid level gaging devices, thermometer well and pressure gage, and shall be provided with suitable access for convenient operation. Connections to tanks installed below the weather deck shall be made to a trunk or dome extending above the weather deck. Tanks installed on hopper barges shall have all pipe connections attached to the top of the tanks. Connections to the tanks shall be protected against mechanical damage and tampering. Other openings in the tanks, except as specifically permitted by this part, are prohibited.

(c) All connections to the tanks, except safety devices and liquid level gaging devices, shall have manually operated shut-off valves located as close to the tank as possible.

(d) Excess flow valves where required by this section shall close automatically at the rated flow of vapor or liquid as specified by the manufacturer. The piping, including valves, fittings and appurtenances, protected by an excess flow valve, shall have a greater capacity than the rated flow of the excess flow valve.

(e) Liquid level gaging devices which are so constructed that outward flow of tank contents shall not exceed that passed by a No. 54 drill size opening, need not be equipped with excess flow valves.

(f) Pressure gage connections need not be equipped with excess flow valves if the openings are not larger than No. 54 drill size.

(g) Excess flow valves may be designed with a bypass, not to exceed a No. 60 drill size opening, to allow equalization of pressure.

(h) Prior to disconnecting shore lines, the pressure in the liquid and vapor lines shall be relieved through suitable valves installed at the loading header.

(i) Relief valves shall be fitted in liquid lines which may be subject to excessive pressure caused by liquid full condition, and the escape from the relief valves shall be piped to the venting system.

(j) The pressure gage shall be located at the highest practical point. The thermometer well shall terminate in the liquid space and be attached to the shell by welding with the end of the fitting being provided with a gas-tight screwed plug or bolted cover.

§ 98.25–45 *Liquid level gaging device.* (a) Each tank shall be fitted with a liquid level gaging device of suitable design to indicate the maximum level to which the tank may be filled with liquid at temperatures between 20° F. and 130° F.

(b) Liquid level gaging devices shall be of the following types: magnetic, rotary tube, slip tube, fixed tube, automatic float, or other types acceptable to the Commandant.

(c) Gaging devices that require bleeding of the product to the atmosphere, such as rotary tube, fixed tube, and slip tube, shall be so designed that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with an excess flow valve.

(d) Gaging devices shall have a design pressure of at least 250 pounds per square inch.

(e) Gage glasses of the columnar type are prohibited.

§ 98.25–50 *Filling and discharge pipes.* (a) Filling connections shall be provided with one of the following:

(1) Combination back pressure check valve and excess flow valve;

(2) One double or two single back pressure check valves; or

(3) A positive shut-off valve in conjunction with either an internal back pressure check valve or an internal excess flow valve.

(b) All other liquid and vapor connections to tanks, except filling connections, safety relief valves, and liquid level gaging devices and pressure gages described in § 98.25–40 (e) and (f) shall be equipped with automatic excess flow valves; or in lieu thereof, may be fitted with quick closing internal stop valves, which, except during filling and discharge operations, shall remain closed. The control mechanism for such valves shall be provided with a secondary remote control of a type acceptable to the Commandant.

(c) The excess flow, internal stop or back pressure check valves shall be located on the inside of the tank or outside where the piping enters the tank. In the latter case, installation shall be made in such a manner that any undue strain will not cause breakage between the tank and the excess flow or internal stop valve.

(d) Where the filling and discharge are made through a common nozzle at the tank, and the connection is fitted with a quick-closing internal stop valve as permitted in paragraph (b) of this section, the back pressure check valve or excess flow valve is not required, provided, however, a positive shut-off valve is installed in conjunction with the internal stop valve.

(e) On tanks installed in barges operating on protected inland waters the suction may be taken from the bottom of the tank provided requirements as follows are met:

(1) A manually operated shut-off valve is attached to the outlet nozzle and a remotely operated internal stop valve is fitted inside the tank.

(2) The remotely controlled valve shall be operable from control stations located at each end of the barge so that the remotely controlled valve on any tank can be closed from either station.

§ 98.25–55 *Cargo piping.* (a) Piping shall be of seamless drawn black steel of thickness not less than Schedule 40. In case of piping on the discharge side of the liquid pumps or vapor compressors, the design shall be for a pressure of not less than the pump or compressor relief valve setting; or if the piping is not fitted with relief valves, the design pressure shall not be less than the total discharge head of the pump or compressor.

(b) Where necessary, provision shall be made for expansion and contraction of piping by means of seamless steel pipe expansion bends. Special consideration will be given for packless type expansion joints. Slip type expansion joints are prohibited. Piping shall be provided with adequate support to take the weight of the piping off the valves and fittings.

§ 98.25–60 *Safety relief valves.* (a) Each tank shall be fitted with two or more approved safety relief valves, designed, constructed and flow-tested for capacity in conformance with Subpart 162.018 of Subchapter Q (Specifications) of this chapter.

(b) Each safety relief valve shall start to discharge at a pressure not in excess of the design pressure of the tank.

(c) The safety relief valves shall have a combined relieving capacity sufficient to prevent a rise of pressure in the tank of more than 20 percent above the maximum allowable pressure when all the safety relief valves are blowing.

(d) (1) The minimum rates of discharge of safety relief valves for uninsulated tanks shall be not less than that determined by the following formula:

$$Q=21.63A^{0.82} \quad (1)$$

where:

Q=minimum required rate of discharge, in cubic feet per minute of standard air at 120 percent of the maximum set pressure of the safety relief valve. Discharge measured at 60° F. and atmospheric pressure (14.7 p. s. i. a.).

A=total external surface area of the tank, in square feet.

$=\pi(D\times U)$ for cylindrical tanks with hemispherical heads.

$=\pi D(U+0.3D)$ for cylindrical tanks with spherically dished or semi-ellipsoidal heads.

$=\pi D^2$ for spherical tanks.

D=outside diameter of the tanks, in feet.

U=external overall length of the tank, in feet.

(2) The minimum rate of discharge of safety relief valves for lagged tanks insulated in conformance with § 98.25–30 need only be 50 percent of the capacity required for uninsulated tanks.

(e) Safety relief valves shall be attached to the tank near the highest point of the vapor space. Shut-off valves shall not be installed between the tanks and the safety relief valves, except manifolds for mounting multiple safety relief valves may be fitted with acceptable interlocking 3-way valves so arranged at all times as to permit at any position of the 3-way valve, an unrestricted flow of vapors through at least one port. When two safety relief valves are mounted in parallel on both the upper outlets of the 3-way valve, the arrangement shall be such as to permit at least one safety relief valve to be operative at all times.

(f) Each safety valve shall be tested in the presence of an inspector at the site of installation before or after mounting prior to being placed in service. The tests shall prove that the safety relief valve will start to discharge at a pressure not in excess of the maximum allowable pressure of the tank.

§ 98.25–65 *Filling density.* (a) The filling density, or the percent ratio of the liquefied gas that may be loaded in the tank to the weight of the water the tank will hold at 60° F., shall not exceed 56 percent for unlagged tanks and 58 percent for lagged or refrigerated tanks.

§ 98.25–70 *Venting.* (a) Except as provided in paragraph (b) of this section, each safety valve installed on a cargo tank shall be connected to a branch vent of a venting system which shall be constructed so that the discharge of gas will be directed vertically upward to a point at least 10 feet above the weather deck or the top of any tank or house located above the weather deck.

(b) Safety valves on cargo tanks in barges may be connected to individual or common risers which shall extend to a reasonable height above the deck. Where the escape of vapors from the venting system may interfere with towing operations, the installation shall be acceptable to the Commandant and the arrangement shall be such as to minimize the hazard of escaping vapors. Arrangements specially provided for venting cargo tanks forming part of the hull on unmanned barges will be given special consideration by the Commandant.

(c) The capacity of branch vents or vent headers shall depend upon the number of cargo tanks connected to such branch or header as provided in Table 98.25–70 (c).

TABLE 98.25–70 (c)—CAPACITY OF BRANCH VENTS OR VENT HEADERS

Number of cargo tanks:	*Percent of total valve discharge*
1 or 2	100
3	90
4	80
5	70
6 or more	60

(d) In addition to the requirement specified in paragraph (c) of this section, the size of the branch vents or vent headers shall be such that the back pressure in relief valve discharge lines shall not be more than 10 percent of the safety relief valve setting.

(e) Return bends and restrictive pipe fittings are prohibited. Vents and headers shall be so installed as to prevent stresses on safety relief valve mountings.

(f) When vent discharge risers are installed, they shall be so located as to provide protection against physical damage and be fitted with loose raincaps.

(g) No shut-off valve shall be fitted in the venting system between the safety relief valve and the vent outlets. Suitable provision shall be made for draining the venting system if liquid can collect therein.

§ 98.25–75 *Ventilation.* (a) All enclosed spaces containing cargo tanks fitted with bottom outlet connections shall be provided with mechanical ventilation of sufficient capacity to assure a change of air every 3 minutes. Where cargo tanks are fitted with top outlet connections, the enclosed spaces containing such tanks shall be fitted with efficient natural or mechanical ventilation.

(b) Enclosed compartments in which machinery such as cargo pumps or vapor compressors are located shall be adequately ventilated.

§ 98.25–80 *Cargo hose.* (a) Cargo hose fabricated of seamless steel pipe with swivel joints, wire braided armored rubber or other hose material acceptable to the Commandant, shall be fitted to the liquid or vapor lines during filling and discharging of the cargo tanks.

(b) Hose subject to tank pressure shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tank.

(c) Hose subject to discharge pressure of pumps or vapor compressors shall be designed for a bursting pressure of not less than five times the pressure setting of the pump or compressor relief valve.

(d) Before being placed in service, each new cargo hose, with all necessary fittings attached, shall be hydrostatically tested by the manufacturer to a pressure of not less than twice the maximum pressure to which it may be subjected in service. The hose shall be marked with the maximum pressure guaranteed by the manufacturer.

§ 98.25–85 *Electrical bonding.* (a) Each cargo tank shall be electrically grounded to the hull. The cargo barge or vessel shall be electrically connected to the shore piping prior to connecting the cargo hose. This electrical connection shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

§ 98.25–90 *Special operating requirements.* (a) Repairs involving the use of welding or burning equipment shall not be undertaken on the anhydrous ammonia barge while liquid or vapor is present in the tanks, except in an emergency involving the safety of the barge.

(b) During the time anhydrous ammonia is laden in the tanks the barge or vessel shall be under constant surveillance. A vessel engaged in towing such barges shall not leave the barge unattended except when the barge is moored at a pier, wharf, dock, or other terminal and then only if such facility is provided with watchman or guard service. When the barge is at the consignor's or consignee's terminal, watchman or guard service shall be provided by said consignor or consignee.

(c) The Interstate Commerce Commission's standard "Dangerous" placard shall be displayed in four locations on the barge when anhydrous ammonia is laden in the tanks. A placard shall be posted approximately amidships on each side and facing outboard. A placard shall be posted at each end of the barge at about the ends of the tanks facing outboard. Racks for mounting such placards shall be so arranged as to provide clear visibility and be protected from becoming readily damaged or obscured. After unloading and before the tank or tanks are gas-freed, the placard shall be reversed to show the "Dangerous—Empty" legend.

(d) Authorization from the Commandant (OPL) shall be obtained to transport lading other than anhydrous ammonia in the cargo tanks.

(e) Sufficient hose stations shall be installed with adequate water supply so that if leakage of anhydrous ammonia occurs the vapors may be removed by use of a stream of water.

(f) At least two ammonia gas masks, one stowed forward of the cargo tanks and one stowed aft of the cargo tanks shall be carried on board the vessel at all times.

§ 98.25–95 *Tests and inspections.* (a) Each cargo tank shall be subjected to an internal examination at least once in each 8 calendar years. Each lagged tank shall be subjected to an external inspection at least once in each 8 calendar years by having the jacket and lagging removed. An external examination of unlagged tanks and the visible parts of lagged tanks shall be made at each biennial inspection.

(b) A hydrostatic test of 1½ times the allowable pressure as determined by the safety relief valve setting shall be made at any time that the inspector considers such hydrostatic test necessary to determine the condition of the tank. If the jacket and lagging are not removed during the hydrostatic tests prescribed in this paragraph, the tank shall hold the hydrostatic test pressure for at least 20 minutes without a pressure drop.

(c) The safety relief valves shall be popped in the presence of a marine inspector by either liquid, gas or vapor pressure at least once every four years to determine the accuracy of adjustment and, if necessary, shall be reset.

Subchapter J—Electrical Engineering

PART 110—GENERAL PROVISIONS

SUBPART 110.05—APPLICATION

Section 110.05–1 (a) is amended by revising Table 110.05–1 (a) to read as follows:

§ 110.05–1 *Vessels subject to the requirements of this subchapter.* (a) * * *

TABLE 110.05–1 (a)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 4]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5.[6]
	Vessels over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.[8]	1. All vessels carrying more than 12 passengers or an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers.[7] 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, issued a permit to carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor	Vessels of not over 15 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[8]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers.[7] 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[8]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	None, except if required by 46 CFR Part 146.[5]	None.
Non-self-propelled	Vessels not over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[5]	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges and inland barges when required by 46 CFR Part 146,[5] except those covered by columns 3 and 4.	All barges carrying passengers except those covered by column 4.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.

[3] Public nautical school ships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.

[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1938 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

(R. S. 4405, as amended, 4462, as amended, 46 U. S. C. 375, 416. Interprets or applies R. S. 4399, as amended, 4400, as amended, 4417, as amended, 4417a, as amended, 4418, as amended, 4421, as amended, 4426, as amended, 4427, as amended, 4433, as amended, 4453, as amended, sec. 14, 29 Stat. 690, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, sec. 5, 49 Stat. 1384, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 54 Stat. 347, as amended, sec. 2, 54 Stat. 1028, as amended, sec. 3, 70 Stat. 152, 153, sec. 3, 68 Stat. 675; 46 U. S. C. 361, 362, 391, 391a, 392, 399, 404, 405, 411, 435, 366, 395, 363, 369, 367, 1333, 463a, 390b, 50 U. S. C. 196. E. O. 10402, 17 F. R. 9917; 3 CFR, 1952 Supp.)

Subchapter N—Explosives or Other Dangerous Articles or Substances and Combustible Liquids on Board Vessels

PART 146—TRANSPORTATION OR STORAGE OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES, AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

SUBPART—GENERAL REGULATIONS

1. Section 146.02–12 is amended by changing paragraph (a) to read as follows:

§ 146.02–12 *Inspection of cargo.* (a) On all vessels, other than barges and magazine vessels storing explosives, an inspection of cargoes of explosives or other dangerous articles or substances shall be ordered by the master of the vessel during a voyage to insure that such cargo is carried with safety and that no damage caused by shifting cargo, spontaneous heating, leaking or sifting of containers or from other causes has been sustained since loading and stowage. On such vessels that have dangerous cargo stowed on board for a period exceeding twenty-four (24) hours temperature readings shall be taken at proper intervals and such temperatures recorded and retained for one year as a record for each voyage. When any cargo is discovered to be in a dangerous condition from leakage, sifting, heating, wetting or other causes, such condition shall be corrected in such manner as the judgment of the master may dictate. All unusual circumstances divulged during inspection of dangerous cargo and any action taken as a result thereof shall be a subject for log entry.

* * * * *

2. Section 146.02–22 is amended by changing paragraph (a) to read as follows:

§ 146.02–22 *Preservation of records.* (a) Where the regulations in this part require the preparation of shipping orders, manifests, or other shipping documents, cargo lists, cargo stowage plans, reports and any other papers or records, it shall be the duty of the owner of the vessel to preserve such records or copies thereof in his office or place of business in the United States for a period of one year. Persons or corporations chartering or engaging or contracting for the use of vessels under such terms and conditions that they have full and exclusive control of the management and operating of such vessels shall be subject to the same requirement for preservation of records as are imposed upon owners of vessels by this section and in such cases the owners shall not be required to preserve such records.

* * * * *

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DEFINITIONS OF WORDS AND TERMS CONTAINED WITHIN THE REGULATIONS IN THIS SUBCHAPTER

Section 146.03–31 is amended to read as follows:

§ 146.03–31 *STC and NRC.* The term "STC" means "single trip container" that must not be reused for shipment of dangerous articles unless approved by the Interstate Commerce Commission. The term "NRC" means "nonreusable container" that must not be reused for shipment of dangerous articles.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interprets or applies sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—LIST OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES CONTAINING THE SHIPPING NAME OR DESCRIPTION OF ARTICLES SUBJECT TO THE REGULATIONS IN THIS SUBCHAPTER

Section 146.04–5 is amended by adding, changing or canceling certain items as follows:

§ 146.04–5 *List of explosives and other dangerous articles and combustible liquids.*

Article	Classed as—	Label required [1]
Items Added		
* * *	* * *	* * *
Actuating cartridges, explosive, fire extinguisher or valve	Expl. C	
* * *	* * *	* * *
Carbon dioxide gas, liquefied (mining device)	Noninf. G	Green gas.
* * *	* * *	* * *
Dimethylhexane dihydroperoxide, dry	Inf. S	Yellow.
Dimethylhexane dihydroperoxide, wet (with at least 30 percent of water by weight).	Inf. S	Yellow.
* * *	* * *	* * *
Methyl bromide and chlorpicrin mixture, liquid (see: Methyl bromide, liquid).	Pois. B	Poison.
* * *	* * *	* * *
Peroxides, organic, solution, liquid, N. O. S. (see: Peroxides, organic, liquid, N. O. S.).	Oxy. M	Yellow.
* * *	* * *	* * *
Pyroforic solutions (see: Pyroforic fuel)	Inf. L	Red.
* * *	* * *	* * *
Items Changed		
* * *		
Smokeless powder for cannon or small arms (see: "Propellant explosives, Class A").		
* * *		
Canceled		
Bone, chipped (heat treated)	Haz.	
Camphor (crude, refined or synthetic)	Haz.	
Cork, granulated	Haz.	
Cork, ground	Haz.	
Fiberboard scrap (*when dry, clean and free from oil*) (see: "Paper scrap").	Haz.	
Fire extinguisher actuating cartridges	Expl. C	
Fish oils	Haz.	
Lead type dross	No restrictions.	
Manganese dioxide	Haz.	
*Resin	Haz.	
Shellac, raw	Haz.	
Stick lac (see: "Shellac, raw")	Haz.	

[1] Unless otherwise exempt by the provisions of the detailed regulations.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interprets or applies sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—SHIPPER'S REQUIREMENTS RE: PACKING, MARKING, LABELING AND SHIPPING PAPERS

1. Section 146.05–12 is amended by changing paragraph (c) to read as follows:

§ 146.05–12 *Originating shipping order, transfer shipping paper.* * * *

(c) A shipper or his authorized agent or representative shall not tender to an initial carrier vessel partial deliveries of a shipment of explosives or other dangerous articles or substances and combustible liquids, except under cover of a delivery paper (known as a delivery receipt or dock receipt) which paper shall show all the information as required for an originating shipping order in paragraph (f) of this section. Delivery receipts covering either full or partial deliveries shall be furnished at least in duplicate and after acknowledgment, one copy shall be retained for one year by the vessel operator. Unit deliveries of the same substance requiring more than eight (8) hours of normal continuous operation to effect complete delivery shall not be construed to be partial deliveries.

2. Section 146.05–13 is amended by changing paragraph (e) to read as follows:

§ 146.05–13 *Originating export shipping paper.* * * *

(e) A shipper or his authorized agent or representative shall not offer to an initial carrier vessel partial deliveries of a shipment of explosives or other dangerous articles except under cover of a dock receipt or other partial delivery receipt, which receipt shall show all the information as required for the originating shipping order. Delivery receipts cover-

ing such shipments shall be furnished in duplicate and after acknowledgment one copy shall be retained for one year by the vessel operator. Separate delivery receipts shall accompany each partial delivery.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S .C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—VESSEL'S REQUIREMENTS, RE: ACCEPTANCE, HANDLING, STOWAGE, ETC.

1. Section 146.06–8 is amended to read as follows:

§ 146.06–8 *Handling on board vessels.* Explosives or other dangerous articles or substances shall be handled on board vessels in conformity with the provisions of the detailed regulations preceding each table of the various classifications and provisions set forth for the particular substances as shown in the tables: *Provided, however,* That railroad vehicles, highway vehicles, vans, or portable containers loaded with any permitted explosives or other dangerous articles or substances to be transported on board a vessel constructed or converted as a trainship, trailership, containership, or combination thereof shall be handled on board the vessel in accordance with the provisions of Subpart 146.07. Highway or railroad vehicles loaded with permitted explosives or other dangerous articles or substances shall be handled on ferry vessels in accordance with the provisions of Subpart 146.08.

2. Section 146.06–9 is amended by changing paragraphs (c), (d), and (e) to read as follows:

§ 146.06–9 *Stowage on board vessels.* * * *

(c) Explosives of different classes or characteristics shall not be stowed together in the same compartment or magazine except as indicated in the chart in § 146.20–90, and the detailed regulations shown in §§ 146.20–1 to 146.20–300. Explosives and other dangerous articles or substances shall not be stowed together in the same hold or compartment except as indicated in the detailed regulations preceding each table of the various classifications and the provisions set forth for the particular substances as shown in the tables.

(d) The provisions of this section shall not apply to railroad vehicles, highway vehicles, vans or portable containers in which are loaded any permitted explosives or other dangerous articles, which are provided for in Subpart 146.07.

(e) The provisions of this section shall not apply to railroad and highway vehicles in which are loaded any permitted explosives or other dangerous articles in compliance with the I. C. C. regulations governing such loading, or combustible liquids when loaded in compliance with the regulations in this part, when carried on board a ferry vessel in accordance with the provisions of Subpart 146.08.

3. Section 146.06–12 is amended to read as follows:

§ 146.06–12 *Dangerous cargo manifest or list required.* All cargo vessels transporting or storing explosives or other dangerous articles or substances as cargo shall have on board during the period of transportation or storage a manifest or list upon which is correctly described every article as defined by the regulations in this part. Passenger vessels shall in addition show every article of combustible liquids in outside containers that is on board the vessel as cargo. This record may be referred to as "Dangerous Cargo Manifest" or "Dangerous Cargo List".

4. Section 146.06–16 *Completeness of manifest or list* is deleted.

5. Section 146.06–18 is amended to read as follows:

§ 146.06–18 *Record copy of manifest or list.* Owners, charterers or agents of vessels transporting or storing explosives or other dangerous articles or substances, and combustible liquids, as cargo, shall retain ashore for one year a copy of the dangerous cargo manifest or list and shall produce said manifest or list in accordance with the provisions of § 146.02–22.

6. Section 146.06–19 is amended to read as follows:

§ 146.06–19 *Cargo stowage plan or cargo stowage list.* Vessel owners, charterers or agents shall cause to be prepared a cargo stowage plan or cargo stowage list covering each ocean going voyage of any domestic cargo vessel transporting explosives or other dangerous articles or substances and of any domestic passenger vessel transporting such explosives or other dangerous articles or substances or combustible liquids in outside containers. The cargo stowage plan or cargo stowage list shall show in all necessary detail the exact location of the stowage of such explosives, articles or substances. The descriptive name thereof, as given in the commodity list in § 146.04–5, shall be the name used to identify these explosives or other dangerous articles or substances. Trade names, marks or other designations shall not be used to identify the dangerous cargo shown upon the stowage plan or list. When articles defined by the regulations in this part as dangerous are stowed in a compartment in which other cargo not of a dangerous nature is stowed, such other cargo that is stowed nearest adjacent to the dangerous articles of cargo shall be accurately described and identified on the stowage plan or list. The serial numbers of railroad vehicles, highway vehicles, vans or portable containers containing no dangerous cargo shall be considered sufficient identification in the case of vessels covered by Subpart 146.07. One copy of the stowage plan or list shall be retained ashore for one year and shall be produced in accordance with the provisions of § 146.02–22.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—RAILROAD VEHICLES, HIGHWAY VEHICLES, VANS OR PORTABLE CONTAINERS LOADED WITH EXPLOSIVES OR OTHER DANGEROUS ARTICLES AND TRANSPORTED ON BOARD OCEAN VESSELS

1. The title for this subpart is amended to read as set forth above.

2. This subpart, consisting of §§ 146.07–1 to 146.07–8, inclusive, is canceled and a new Subpart 146.07 is added to read as follows:

Sec.

146.07–1 Applicability and definitions.
146.07–5 Permitted shipments.
146.07–10 Tank containers.
146.07–15 Acceptance on board vessels.
146.07–20 Certification.
146.07–25 Marking and placarding.
146.07–30 Inspection.
146.07–35 Exemption of railroad and highway vehicles, vans or portable containers from detailed handling or stowage requirements.
146.07–40 Stowage on board vessels.

AUTHORITY: §§ 146.07–1 to 146.07–40 issued under R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.

§ 146.07–1 *Applicability and definitions.* (a) The regulations in this subpart apply to railroad vehicles, highway vehicles, vans and portable containers in which are loaded any permitted explosives or other dangerous articles or substances, as defined in this part, when transported, carried or conveyed on board a vessel constructed or converted as a trainship, trailership or containership, or combination thereof. The regulations in this subpart do not apply to railroad or highway vehicles loaded with explosives or other dangerous articles or substances transported on board a railroad car ferry or highway vehicle ferry, or carfloat, or to vans, portable containers or portable tanks carried as cargo on dry cargo vessels.

(b) For purposes of the regulations in this subpart the following definitions apply:

(1) A railroad vehicle is a cargo carrying body or tank permanently attached to an underframe and wheels (box car, tank car, etc.) which is loaded, stowed and discharged as a unit.

(2) A highway vehicle is a cargo carrying body or tank permanently attached to the chassis and wheels which is loaded, stowed and discharged as a unit.

(3) A van is a cargo carrying body other than a tank container which is designed and constructed to be removed from a chassis and wheels for water transportation. It is loaded and discharged by a "lift on-lift off" method.

(4) A portable container is a cargo carrying unit other than a "van" which is designed to be loaded or discharged by a "lift on-lift off" method. Portable containers shall be ICC specification portable containers (ICC–51, ICC–60) and/or shall be approved by the Commandant, United States Coast Guard.

(5) A trainship is a vessel other than a railroad car ferry or carfloat designed to transport railroad vehicles.

(6) A trailership is a vessel other than a highway vehicle ferry or carfloat designed to transport highway vehicles.

(f) A containership is a vessel designed to transport vans or portable containers.

§ 146.07–5 *Permitted shipments.* (a) Railroad vehicles, highway vehicles, vans or portable containers in which are loaded any permitted explosives or other dangerous articles or substances may be transported, carried or conveyed on board a trainship, trailership, or containership, or combination thereof, provided there is compliance with the regulations in this subpart.

(b) Railroad vehicles, highway vehicles, vans or portable containers in which are loaded explosives or other dangerous articles or substances or combustible liquids shall not be transported, carried or conveyed on board passenger vessels unless such items are specifically permitted by the regulations in this part to be transported, carried or conveyed on board passenger vessels, and provided there is compliance with the regulations in this subpart.

(c) Containers and packages of explosives, inflammable (flammable) liquids, inflammable (flammable) solids, oxidizing materials, corrosive liquids, compressed gases, poisons, and hazardous articles shall be so braced and secured in accordance with Interstate Commerce Commission Regulations (49 CFR Parts 71–78) for the vehicle concerned as to prevent movement within the railroad vehicle, highway vehicle, van or portable container in which they are being transported. Containers having valves or other fittings must have the valves or fittings protected and be so loaded that there will be a minimum likelihood of damage thereto during transportation. Containers marked with stowage instructions such as "This side up" or "This end up" shall be so stowed.

(d) Railroad vehicles, highway vehicles, vans and portable containers equipped with refrigerating or heating equipment using an inflammable (flammable) liquid or gas as fuel, and having such fuel in the fuel tank shall be transported only "On deck". Such equipment may be operated on board the vessel when the "On deck" stowage is provided. Vehicles stowed "On deck" may be refueled under supervision of an officer of the vessel who shall ensure that adequate safety precautions are observed. If the equipment is secured, and the fuel tank completely drained, the railroad vehicle, highway vehicle, van or portable container may be stowed in accordance with the requirements of this subpart.

(e) All of that portion of the lading of any railroad vehicle, highway vehicle, van, or portable container which consists of explosives or other dangerous articles shall be contained entirely within its body or within the horizontal outline thereof, without overhang or projection of any part of the load, and if such railroad vehicle, highway vehicle, van, or portable container has a tailboard or tailgate, it shall be closed and secured in place during such transportation.

§ 146.07–10 *Tank containers.* (a) Railroad or highway vehicles to which is attached a tank containing any explosives or other dangerous articles or substances shall not be offered or accepted for transportation on board any vessel specifically covered by the regulations in this subpart unless such articles or substances are permitted by the regulations in this part to be carried on board a vessel, and provided there is compliance with the regulations in this subpart.

(b) This section does not apply to tank containers removed from the vehicle chassis or underframe. Such containers shall be considered portable containers, and the materials, design, construction and method of handling shall be approved by the Commandant of the United States Coast Guard.

(c) Railroad or highway vehicles to which is attached a tank, or portable tank containers, which previously contained a substance defined as dangerous by the regulations in this part, shall be transported in accordance with § 146.27–100.

§ 146.07–15 *Acceptance on board vessels.* (a) The master, owner, charterer, agent or other person in charge of the vessel shall require the shipper or his agent, or the delivering carrier, or the driver of the vehicle to furnish a copy of the shipper's shipping order, shipping paper, bill of lading, manifest or other memorandum, or a waybill prepared from information furnished in the shipper's shipping order bearing the certification required by § 146.07–20 before accepting any railroad or highway vehicles, vans or portable containers in which are loaded explosives or other dangerous articles or substances. This shipping paper shall have entered upon it the proper and definite name of the commodity or commodities contained therein according to § 146.04–5, the total quantity by weight or volume, the prescribed label when required for the outside container of such article, the name and addresses of the consignor and consignee, and the identification number of the vehicle, van or portable container. In lieu of the consignee's name shipping marks may be used. The Dangerous Cargo Manifest or List (§ 146.06–12) shall be compiled from this information.

(b) The master or other person in charge of the vessel shall assign an officer of the vessel to supervise the acceptance and stowage of railroad or highway vehicles, vans or portable containers containing permitted explosives or other dangerous articles or substances. This officer shall examine the vehicles or containers for signs of leaking, damage to the container, or sifting of contents. For tanks he shall examine dome covers to ascertain if they are fitted securely; check valves, piping and the tanks for leakage or excess residue of lading. Any vehicle or container found to be damaged, leaking or sifting, or having excess residue of lading adhering thereto shall not be accepted for transportation.

§ 146.07–20 *Certification.* The shipping order or other memorandum furnished by the shipper, agent or delivering carrier shall bear the following certificate of the shipper or his duly authorized agent:

This is to certify that the above named articles are properly described, packed and marked, and in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission and Commandant of the United States Coast Guard.

§ 146.07–25 *Marking and placarding.* Railroad vehicles, highway vehicles, vans or portable containers in which are loaded explosives or other dangerous articles in any amount shall be marked with the "Explosives", "Dangerous", "Poison Gas", or "Radioactive Material" placard as described in the Interstate Commerce Commission regulations pertaining to each means of transportation, and shall carry an identification number.

§ 146.07–30 *Inspection.* Railroad vehicles, highway vehicles, vans or portable containers containing explosives or other dangerous articles or substances destined for transportation by vessel may be opened by a duly authorized representative of the Coast Guard for inspection to determine compliance with regulations applicable to such shipments.

§ 146.07–35 *Exemption of railroad and highway vehicles, vans or portable containers from detailed handling or stowage requirements.* (a) Detailed regulations governing handling and stowage of permitted explosives, inflammable (flammable) liquids, inflammable (flammable) solids, oxidizing materials, corrosive liquids, compressed gases or poisons on board vessels do not apply to such substances loaded in railroad or highway vehicles, vans or portable containers provided such substances remain within the vehicle, van or portable container, and are certified in accordance with § 146.07–20. Permit requirements for explosives (§ 146.20–85, 146.20–87) and ammonium nitrate (§ 146.22–30) are applicable.

(b) Detailed regulations governing handling and stowage of hazardous articles or combustible liquids on board vessels do not apply to such articles or substances loaded in railroad or highway vehicles, vans or portable containers, provided such articles or substances are certified on the shipping paper as being properly described by name, and as being packed, marked and in proper condition for transportation according to the regulations in this part.

§ 146.07–40 *Stowage on board vessels.* Railroad or highway vehicles, vans or portable containers in which are loaded any permitted explosives or other dangerous articles or substances which are certified on the shipping papers as being described, packed, marked and labeled in accordance with Interstate Commerce Commission regulations, or hazardous articles which are described, packed, and marked in accordance with the regulations in this part, shall when taken on board the vessel be stowed in accordance with the following provisions:

(a) *Explosives.* Plans and specifications for highway vehicles, vans and portable containers proposed to be used for transportation of explosives, for which a permit is required by §§ 146.20–85 and 146.20–87, shall be specifically

approved by the Commandant of the Coast Guard. Vehicles or other containers loaded with permitted explosives are not required to be given magazine stowage provided the vehicles or containers form a complete magazine. Such vehicles, vans, or portable containers may be stowed "Under deck" and away from all sources of heat, and not overstowed. No vehicle, van or container containing any other dangerous articles that require a placard by this subpart shall be stowed within a distance of 100 feet or unless separated by two continuous permanent decks or bulkheads from vehicles, vans or containers loaded with Class A or Class B explosives. Blasting caps or other detonators in any quantity shall not be transported in the same vehicle, van or portable container with any other explosives. In addition to the usual securing means provided, vehicles or containers loaded with explosives shall be anchored by an additional securing means satisfactory to the United States Coast Guard and the master of the vessel so as to completely secure the entire unit to prevent any movement of the body thereof.

(b) *Other dangerous articles.* Vehicles, vans or portable containers loaded with any other permitted dangerous article shall be stowed on board the vessel in accordance with the stowages required in the tables for the substances within the vehicles. Such stowages are not feasible in each instance for railroad or highway vehicles, vans, or portable containers stowed below deck on vessels; and, for the purpose of adopting these stowages to the conditions incident to transportation of railroad and highway vehicles, vans, and portable containers in this method of transportation, a conversion table is shown in paragraph (c) of this section. Permitted stowages as shown in Tables A through K for the substances loaded within the vehicles may be converted in accordance with this conversion table. When so converted the stowage in columns 2 and 3 may be utilized in lieu of the stowage indicated under column 1.

(c) *Conversion table of stowage.*

(1)	(2)	(3)
Substances required by the tables forming part of these regulations to be stowed as follows:	May be stowed in the following locations when contained in railroad vehicles or highway vehicles:	Trailer vans or containers when stacked:
On deck in open	Weather deck	Weather deck.
On deck protected	Weather deck or first deck below	Weather deck or top stowed.
On deck under cover	Weather deck or first deck below	Weather deck or top stowed.
Tween decks readily accessible	Weather deck or first deck below	Weather deck or top stowed.
Tween decks	Any deck	Any deck.
Cargo hatch trunkway	Any deck	Any deck.
Under deck	Any deck	Any deck.
Under deck but not overstowed	Any deck	Any deck.
Under deck away from heat	Any deck but at least 35 feet from heat bulkhead.	Any deck but at least 35 feet from heat bulkhead.

(d) *Compatibility of other dangerous articles.* No vehicle, van or portable container loaded with dangerous articles requiring a placard under this subpart shall be stowed adjacent to a placarded vehicle, van or container loaded with other dangerous articles deemed to be incompatible by this part, in either a fore, aft, athwartship or vertical direction unless separated by an intervening steel deck or bulkhead.

SUBPART—RAILROAD OR HIGHWAY VEHICLES LOADED WITH DANGEROUS SUBSTANCES AND TRANSPORTED ON BOARD VESSELS

This subpart, consisting of §§ 146.08–1 to 146.08–11, inclusive, is canceled and a new Subpart 146.08 is added to read as follows:

Sec.

146.08–1 Prohibited articles.
146.08–5 Permitted articles.
146.08–10 Tank containers.
146.08–15 Acceptance of railroad vehicles on board ferry vessels.
146.08–20 Acceptance of highway vehicles on board ferry vessels.
146.08–25 Empty tank containers.
146.08–30 Exemption of railroad and highway vehicles from detailed handling or stowage requirements.
146.08–35 Stowage of railroad or highway vehicles.
146.08–40 Control of highway vehicle.
146.08–45 Private passenger type motor vehicles (automobiles).
146.08–50 Cylinders laden in highway vehicles.
146.08–55 Vehicles having refrigerating or heating equipment.

AUTHORITY: §§ 146.08–1 to 146.08–55 issued under R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.

§ 146.08–1 *Prohibited articles.* Railroad or highway vehicles in which are loaded any explosives prohibited by subsection 3 of R. S. 4472, as amended (46 U. S. C. 170), or any other explosive or other dangerous article or substances and combustible liquids not permitted by the regulations in this part shall not be accepted, transported, carried or conveyed on board any railroad car ferry or highway vehicle ferry.

§ 146.08–5 *Permitted articles.* (a) Railroad or highway vehicles in which are loaded any permitted explosives or other dangerous articles or substances as defined in this subchapter may be transported, carried or conveyed on board a railroad car ferry or highway vehicle ferry provided there is compliance with the provisions of this subpart.

(b) Railroad or highway vehicles loaded with explosives or other dangerous articles or substances, and combustible liquids shall not be transported, carried or conveyed on board a passenger ferry vessel unless such explosives or other dangerous articles or substances, and combustible liquids are specifically permitted by the regulations in this part to be transported, carried or conveyed on board such vessels and provided there is compliance with the provisions of this subpart.

§ 146.08–10 *Tank containers.* A railroad or highway vehicle to which is attached a tank containing any explosives or other dangerous articles or substances as defined in this subchapter shall not be offered, transported, carried or conveyed on board any passenger ferry vessel unless such explosives or other dangerous articles or substances are specifically permitted by the regulations in this part to be transported, carried or conveyed on board such vessel and provided there is compliance with the provisions of this part.

§ 146.08–15 *Acceptance of railroad vehicles on board ferry vessels.* (a) The master, owner, charterer, agent or other person in charge of the vessel shall require the shipper or his agent or the delivering carrier to furnish a copy of the shipper's shipping order or a waybill prepared from information furnished in the shipper's shipping order before accepting any railroad vehicles in which are loaded explosives or other dangerous articles or substances as defined by the regulations in this part. This shipping paper shall have entered upon it the amounts and the true shipping name of the contents of the vehicle, and the names of the consignor and the consignee. In lieu of the consignee's name, shipping marks may be substituted. A transfer shipping paper shall show sufficient information to identify the preceding shipping paper.

(b) The master or other person in charge of the vessel shall assign an officer of the vessel to supervise the acceptance and stowage of railroad vehicles containing explosives or other dangerous articles or substances and combustible liquids which are permitted by the regulations in this part to be transported on board a vessel. This officer shall examine all railroad vehicles for signs of leaking or sifting of contents. For tanks, he shall examine dome covers to ascertain they are fitted securely in place; check the valves, piping, and the tank for leakage; check the tank for any excess residue of lading adhering thereto. Any vehicles found to be leaking or which show sifting of contents or having excess residue of lading adhering thereto shall not be accepted for transportation.

§ 146.08–20 *Acceptance of highway vehicles on board ferry vessels.* (a) The vessel owner, master, or officer in charge of accepting highway vehicles on board a vessel shall require the operator of the vehicle to present a shipping paper which describes the lading of the vehicle in accordance with the provisions of paragraph (c) of this section.

(b) The owner or master of a vessel shall assign an officer of the vessel or other competent person to supervise the acceptance and stowage of highway vehicles containing explosives or other dangerous articles or substances and combustible liquids that are permitted by the regulations in this part to be transported on board a vessel.

(c) Highway vehicle carrier's statement: The person in charge of a highway vehicle loaded with permitted explosives or other dangerous articles or substances and combustible liquids that it is desired to transport on board a vessel shall deliver to the master, his representative or other person in charge a shipping paper or true copy thereof

describing the articles of lading within the vehicle. The information given shall include at least all of the following:

(1) Date.

(2) Name of highway vehicle owner.

(3) Name of operator of vehicle.

(4) Identification of vehicle (by mark or number or registration if a motor vehicle).

(5) Description of explosives or other dangerous articles and combustible liquids laden in the vehicle. This description shall be in accordance with the terms used in the regulations in this part and shall state the approximate weight or quantity of the dangerous articles within the vehicle and the shipping name of the dangerous substances in accordance with the commodity list herein.

(6) Such shipping paper shall bear the following certification over the written or stamped facsimile signature of the vehicle owner or his agent:

"This is to certify that the above statement accurately describes the articles within this vehicle in accordance with the information furnished by the shipper thereof, and to the best of my knowledge there are no articles within this vehicle that are not permitted to be transported on board the vessel utilized in accordance with regulations of the Commandant of the Coast Guard."

§ 146.08–25 *Empty tank containers.* For conditions governing transportation of empty tanks, forming a part of railroad or highway vehicles and which recently contained a substance defined as dangerous by the regulations in this part, see § 146.27–100.

§ 146.08–30 *Exemption of railroad and highway vehicles from detailed handling or stowage requirements.* (a) Detailed regulations governing handling and stowage of permitted explosives, inflammable liquids, inflammable solids, oxidizing materials, corrosive liquids, compressed gases or poisons on board vessels do not apply to such substances loaded in railroad and highway vehicles, provided such substances remain within the vehicle and are certified as being in proper condition for transportation according to the regulations of the Interstate Commerce Commission in effect at the time of shipment.

(b) Detailed regulations governing handling and stowage of hazardous articles or combustible liquids on board ferry vessels do not apply to such articles or substances loaded in railroad or highway vehicles, provided such articles or substances are properly described by name and packed and marked and in proper condition for transportation according to the regulations in this part.

§ 146.08–35 *Stowage of railroad or highway vehicles.* (a) Highway vehicles in which are loaded any permitted explosives or other dangerous articles or combustible liquids which are certified by the vehicle operator in accordance with the provisions of this subpart shall when taken on board a ferry vessel be stowed in accordance with the provisions for "Ferry stowage (AA)" as shown in § 146.03–34 (k). Highway vehicles containing carbon dioxide, solid, either as cargo or as a refrigerant shall be stowed in a well-ventilated location.

(b) Railroad vehicles in which are loaded any permitted explosives or other dangerous articles or substances which are certified on the shipping papers as being described, packed, marked, and labeled in accordance with the ICC regulations, or hazardous articles packed, marked, and labeled in accordance with the regulations in this part may be stowed in any location on the car deck away from heat on board a railroad car ferry operating as a cargo vessel. Railroad vehicles containing carbon dioxide, solid, either as cargo or as a refrigerant, shall be stowed in a well-ventilated location.

(c) Railroad vehicles in which are loaded any permitted explosives or other dangerous articles or substances which are certified on the shipping papers as being described, packed, marked, and labeled in accordance with the ICC regulations, or combustible liquids or hazardous articles certified on the shipping papers as being described, packed, marked, and labeled as required by the regulations in this part shall be stowed in a location on the car deck in accordance with the provisions of "Ferry stowage (BB)" on board a railroad car ferry operating as a passenger vessel. (See § 146.03–34 (l).) Railroad vehicles containing carbon dioxide, solid, either as cargo or as a refrigerant, shall be stowed in a well-ventilated location.

§ 146.08–40 *Control of highway vehicle.* (a) The operator or person in charge of a highway vehicle containing any of the permitted dangerous articles as defined by the regulations in this part, when entering upon or while being transported upon any vessel, shall observe the following rules:

(1) Deliver to the vessel's representative the vehicle carrier's statement covering the lading of the vehicle as required by § 146.08–20.

(2) Drive the vehicle to the location indicated by the vessel's representative.

(3) Securely set the brakes of the vehicle to prevent movement.

(4) Shut off the motor and do not restart same until the vessel has completed its voyage and docked.

(5) Cut off all vehicle lights and do not relight same until the vessel has completed its voyage and docked.

(6) Remain with the vehicle.

(7) Make no repairs or adjustments to the vehicle while on board the vessel.

(8) Observe any instructions given by the vessel's representative during the voyage, or during "drive on" or "drive off" operations.

(b) Smoking by any person within the vehicle is prohibited.

§ 146.08–45 *Private passenger type motor vehicles (automobiles).* Such vehicles shall not be offered or accepted for transportation on board passenger-carrying ferries while having within the automobile any permitted explosives (except permitted fireworks or small arms ammunitions) unless complying with all the provisions of the regulations in this part regarding such substances. Such automobiles shall not have within the vehicle any other dangerous articles or substances or combustible liquid as defined in the regulations in this part when being transported for hire except in compliance with the regulations in this part: *Provided, however,* That such vehicles are exempt from the provisions of the regulations in this part with respect to descriptions, descriptive name, packing, marking, labeling, and certification when having in the vehicle any permitted fireworks or small arms ammunition or any other dangerous articles or substances or any combustible liquid in tightly closed containers, provided such substances are not being carried by the automobile for hire. Such vehicles, their owners or operators shall, when entering upon and while being transported and when leaving a vessel, conform with all of the provisions of the regulations shown in the table in § 146.27–100 applying to the transportation of such vehicles.

§ 146.08–50 *Cylinders laden in highway vehicles.* Cylinders of compressed gas of the type required by the regulations in this part to have valve protection cap fitted in place on the cylinder may be transported on board ferry vessels without having the valve protection cap in place when said cylinders are laden in highway vehicles and are not removed from the vehicles while on board the vessel.

§ 146.08–55 *Vehicles having refrigerating or heating equipment.* (a) Vehicles, fitted with refrigerating or heating equipment using an inflammable liquid or gas or diesel oil as fuel, may be accepted for transportation, and such refrigerating or heating equipment may be operated while the vehicle is on board a vessel, provided the installation conforms with the following requirements:

(1) The installation is rigidly mounted and free of any movement other than normal vibration of operation.

(2) A shut-off control, easily accessible, is fitted to the fuel and electrical supply of refrigerating or heating equipment.

(3) The fuel storage tank, the fuel lines and the carburetor or other device shall be tight and show no signs of leakage.

(b) Refrigerating or heating equipment not fitted with automatic starting and stopping devices shall, if the vehicle operator desires the equipment to operate while on board the vessel, be started before the vehicle is taken on board. It may continue in operation while the vehicle is on the vessel, but if for any cause the motor ceases to operate it shall not be restarted until after the vehicle leaves the vessel.

(c) Vessels on voyages exceeding thirty (30) minutes duration shall provide a stowage for vehicles having refrigerating or heating equipment operated by internal combustion engines as will permit ready diffusion of exhaust gases to the open air. Passenger vehicles shall not be stowed in a position adjacent to vehicles operating internal combustion motors as would expose the occupants thereof to excessive concentrations of exhaust fumes from such motors.

(d) The master or person in charge of a vessel may, when he deems it necessary for any cause, require the vehicle operator to stop the operation of refrigerating or heating equipment attached to a vehicle while on board the vessel.

SUBPART—CARGO HANDLING AND STOWAGE DEVICES, U. S. COAST GUARD CONTAINER SPECIFICATIONS

1. Section 146.09–2 (b) is amended by adding subparagraph (5) to read as follows:

§ 146.09–2 *Magazines, construction of.* * * *

(b) * * *

(5) If the bulkheads forming the sides of a magazine are to be constructed directly against the ship's side and battens are fitted, then 5/16" plywood may be used, provided the plywood is fastened to furring strips of not less than 1" x 3", spaced not more than 18" apart, and securely fastened vertically to the battens.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interprets or applies sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING EXPLOSIVES

1. Section 146.20–11 is amended by changing paragraph (w) to read as follows:

§ 146.20–11 *Class C explosives.* * * *

(w) Actuating cartridges, explosive, fire extinguisher or valve consist of a small metal or fiber housing containing a small amount of initiating explosive and a propellant and are used to actuate valves on remotely controlled fire extinguishers or other apparatus.

2. Section 146.20–23 is amended by changing paragraph (a) (1) to read as follows:

§ 146.20–23 *Stowage of explosives in magazines adjacent to other dangerous articles.* (a) * * *

(1) Dynamite, commercial boosters and other non-priming, non-initiating types of explosives which are compatible with dynamite may be stowed in a magazine located in the same hold or compartment with nitro carbo nitrate or in holds or compartments adjacent to nitro carbo nitrate.

3. Section 146.20–29 is amended by adding a new paragraph (d) to read as follows:

§ 146.20–29 *Preparation of magazines, decks, hatches and holds before handling explosives.* * * *

(d) Any deck loads over which explosives must be passed shall be limited in height to that of the hatch coaming, bulwark or three feet, whichever is greater.

4. Section 146.20–35 is amended by changing paragraphs (b), (c), and (e) to read as follows:

§ 146.20–35 *Handling explosives.* * * *

(b) Packaged Class A explosives shall be loaded and discharged from a vessel by hand, by using a regulation chute and mattress or by means of a mechanical hoist, pallet, skipboard, tray or pieplate, fitted with cargo net or sideboards. The maximum load handled in a pallet skipboard, tray or pieplate shall not exceed 2,400 pounds plus 10 percent. Rope net slings with pallet, skipboard, pieplate or similar base shall be so loaded that when lifted a minimum displacement of items shall occur and the cargo net shall completely encompass the load except on its topside. Not more than one third of the vertical dimension of any package shall extend above the sideboard of the tray. Drafts of explosives shall be hoisted and lowered carefully and only deposited or lowered on to a mattress.

(c) Blasting caps, detonating fuzes, fulminate of mercury and other initiating or priming explosives as defined in this subpart shall be considered as constituting a distinct class of dangerous explosives and they shall be handled with extreme care. A chute and mattress shall not be used when loading or discharging this class of explosives.

* * * * *

(e) Transfer trucks equipped with a mechanical means of propulsion shall not be used when handling any high explosives, low explosives, black powder or propellant explosives on board a vessel.

5. Section 146.20–45 is amended by deleting the present wording and rewording the text as follows:

§ 146.20–45 *Smoking.* (a) Smoking is prohibited on or near any vessel loading or unloading explosives at a waterfront facility. Smoking areas may be designated by the Coast Guard officer having jurisdiction provided such areas are located at a safe distance from the vessel. "No smoking" signs shall be posted during operations of handling, loading or unloading such cargo. At least one "No Smoking" sign shall be located on the pier at a reasonable distance from the vessel when such handling, loading or unloading is taking place.

(b) Smoking is prohibited on or near any vessel handling, loading or unloading explosives at an explosives anchorage, except the Coast Guard officer having jurisdiction may, with concurrence of the master or person in charge of the vessel, designate a compartment as a smoking area. "No smoking" signs shall be posted conspicuously outside the entrance to this compartment and in other parts of the vessel during the loading or unloading operations.

6. Section 146.20–90 is amended by changing footnote 4 in the chart (referred to in column 18) to read as follows:

§ 146.20–90 *Stowage and storage chart of explosives and other dangerous articles.* * * *

STOWAGE AND STORAGE CHART OF EXPLOSIVES AND OTHER DANGEROUS ARTICLES

* * * * *

[4] Nitro carbo nitrate may be stowed in the same hold or compartment with a magazine containing dynamite, commercial boosters and other non-priming, non-initiating types of explosives that are compatible with dynamite.

7. Section 146.20–200 *Table B—Classification: Class B; less dangerous explosives* is amended as follows:

§ 146.20–200 *Table B—Classification: Class B; less dangerous explosives*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Propellant explosives, Class B.	Propellant explosives, Class B, are solid chemicals or solid chemical mixtures which function by rapid combustion of successive layers generally with little or no smoke. The combustion is controlled by composition, size, and form of grain. Propellant explosives, Class B, include smokeless powder for small arms, smokeless powder for cannon, smokeless powder or solid propellant for rockets, jet thrust units, or other devices. Black powder is not classified as a propellant explosive. (See: Black powder, § 146.20–100.) Propellant explosives as prepared for shipment that are sensitive to detonation are Class A explosives. (See: Propellant explosives, Class A, § 146.20–100.) Each outside container must be plainly marked: "Propellant Explosives, Class B."	No label required.	Stowage—magazine or: "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Wooden barrels or kegs (ICC–10B) not over 200 lb. gr. wt. Metal kegs (ICC–13) not over 150 lb. gr wt. Bundles of metal kegs (ICC–13) roped, wrapped in burlap, canvas or similar materials, securely sewed and roped, not over 100 lb. net wt. Tight metal containers, not over 200 lb. gr. wt. Tight wooden boxes with tight inside metal cases, not over 200 lb. gr. wt. Wooden boxes (ICC–14, 15A, 15B, 15C) with ICC approved inside containers, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12H, 23F, 23H) with ICC approved inside containers, not over 65 lb. gr. wt. Authorized only for grains not less than 1 inch in diameter or 3 inches in length if tightly packed and protectively coated: Wooden boxes (ICC–14, 15A, 16A) not over 200 lb. gr. wt.	Not permitted.	Not permitted.	Not permitted.
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8. Section 146.20–300 *Table C—Classification: Class C, relatively safe explosives* is amended as follows:

§ 146.20–300 *Table C—Classification: Class C; relatively safe explosives*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Actuating cartridges, explosive, fire extinguisher or valve.	*Used to actuate the valves on remotely controlled fire extinguishers.* Do not stow in the same compartment with inflammable liquids, inflammable solids or oxidizing materials, corrosive liquids or inflammable compressed gases. Each outside container must be plainly marked "Actuating Cartridges, Explosive, Fire Extinguisher—Handle Carefully" or "Actuating Cartridges, Explosive, Valve—Handle Carefully".	No label required.	Stowage: "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Strong wooden boxes, not over 150 lb. gr. wt. Strong fiberboard boxes, not over 65 lb. gr. wt.	Stowage: "On deck under cover." "Tween decks readily accessible." Outside containers: Strong wooden boxes, not over 150 lb. gr. wt. Strong fiberboard boxes, not over 65 lb. gr. wt.	Ferry stowage (AA) Outside containers: Strong wooden boxes, not over 150 lb. gr. wt. Strong fiberboard boxes, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Strong wooden boxes, not over 150 lb. gr. wt. Strong fiberboard boxes, not over 65 lb. gr. wt.
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(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING INFLAMMABLE LIQUIDS

1. Section 146.21–65 is amended by changing paragraph (c) to include the following as subparagraph (28a):

§ 146.21–65 *Limited quantity shipments.* * * *

(c) * * *

(28a) Pyroforic solutions.

2. Section 146.21–100 *Table D—Classification: Inflammable liquids* is amended as follows:

§ 146.21–100 *Table D—Classification: Inflammable liquids*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Acetaldehyde (*ethyl aldehyde*).	*A clear, volatile liquid with a pungent fruity odor. Will evaporate rapidly.* *Vapors when mixed with air are explosive over a very wide range of about 4% to 57%.* *Flashpoint about −17° F. Boiling point 70° F.* *Miscible with water.* Keep cool.	Red	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Acetone	*A clear, colorless, liquid having a pleasant odor somewhat similar to wood alcohol. Vapors are 2 times heavier than air and when mixed with air are explosive over a range of 3% to 13% in air. Sustained inhalation of vapors in unventilated compartments is dangerous. Flashpoint about 1° F. Boiling point 133° F. Miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Acetone oils (When possessing a flashpoint at or below 80° F.)	*Oily residuum obtained as a by-product in the distillation of acetone. Flashpoint variable but usually low.*	Red.				
Acrylonitrile	*Flashpoint about 32° F. Boiling point 178° F.*	Red.				
. . .	. . .	. . .	. . .	. . .	. . .	. . .

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Alcohol or alcohol, N. O. S. (When possessing a flashpoint at or below 80° F.)	*General: These alcohols are colorless, volatile liquids about 80% as heavy as water and possessing a characteristic odor. Their vapors are heavier than air, and will form explosive mixtures over varying ranges of percentages with air.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-6J) WIC ICC-2S not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-6J) WIC ICC-2S not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-6J) WIC ICC-2S not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-6J) WIC ICC-2S not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Alcohol, butyl		Red.				
Alcohol, denatured		Red.				
Alcohol, ethyl		Red.				
Alcohol, propyl		Red.				
Alcohol, tertiary		Red.				
Alcohol, wood (methanol)		Red.				
Butyl alcohol		Red.				
Cologne spirits (alcohol)		Red.				
Columbian spirits (*wood alcohol*)		Red.				
Extracts, liquid flavoring		Red.				
Isopropanol		Red.				
Methanol (*methyl alcohol*) (*methyl hydrate*)		Red.				
Rum, denatured (When possessing a flashpoint at or below 80° F.)		Red.				
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Allyl bromide	*Colorless heavy liquid having a pungent odor. Insoluble in water. Does not evaporate readily. Fumes somewhat irritating to eyes and tissue. Flashpoint below 80° F.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Amyl acetate (when possessing a flashpoint at or below 80° F.)	*Colorless liquid, pear or banana like odor. Flashpoint from 70 to 90° F. Immiscible with water.*	Red.				
Amyl chloride	*A liquid having a straw to deep purple color. Flashpoint 34° F. Immiscible with water. Vapors are 3.67 times heavier than air and form an explosive mixture with a lower range of 1.4% in air.*	Red.				
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Amyl nitrite	*Yellowish, transparent volatile unstable liquid having fragrant fruity odor.* *Decomposes on exposure to air, light or water.* *Vapors are orange color.* *Boiling point, 206° F.* *Immiscible with water.* Keep cool. Stow well away from all sources of heat.	Red	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums: (ICC-42B, 42C) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Antifreeze compounds, liquid. (When possessing a flashpoint at or below 80° F.)	*Products added to the cooling systems (radiators) of automobiles, tractors, and to other mechanical systems to lower the freezing point of water.* *Among the common antifreezes are alcohol, glycerin, mixtures of both, and ethylene glycol.* *Flashpoint variable.* *Hazard similar to alcohol.* *Miscible with water.*	Red.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC. (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC. not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Antifreeze preparations, proprietary, liquid. (When possessing a flashpoint at or below 80° F.)		Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Benzene (benzol) Benzol (benzene).	*A clear, colorless liquid of aromatic odor, distilled from coal tar.* *Flashpoint about —12° F.* *Boiling point 174° F.* *Will freeze solid slightly above the freezing point of water. Therefore, will flash below its own freezing point.* *Immiscible with water.* *Vapors are 2.77 times heavier than air and form an explosive mixture within a range of 1.5% to 7% in air.* *Vapors are poisonous and suffocating.*	Red.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lbs. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Not permitted	Not permitted	Not permitted.
Benzine Coal tar light oil. Petroleum ether. Petroleum naphtha. Naphtha. (When possessing a flashpoint at or below 80° F.)	*A mixture of several of the lighter constituents of petroleum.* *Flashpoint about 5° F.* *Boiling point 104° to 158° F.* *Immiscible with water.* *Vapors are 4 to 5 times heavier than air and form an explosive mixture within a range of 2% to 5% in air.*	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Box toe gum (when possessing a flashpoint at or below 80° F.).	*A liquid cement-like solution of variable formulae used in the manufacture of shoes. It may consist of nitrocellulose, shellac, or rosin dissolved in a volatile solvent.* *Flashpoint variable, depending upon the solvent used.* *Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accdssible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 30 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 30 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Butyl acetate (when possessing a flashpoint at or below 80° F.).	*Colorless limpid liquid with fruity odor.* *Flashpoint variable.* *Vapors heavier than air.* *Immiscible with water.* *Lighter than water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes (ICC-15X) WIMC, not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC-21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes (ICC-15X) WIMC, not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Butyraldehyde	*Colorless liquid.* *Flashpoint 20° F.* *Boiling point 169° F.* *Vapors about 2½ times heavier than air.* *Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC not over 55 gal. cap. (ICC-17E) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lbs. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Cement, leather (When possessing a flashpoint at or below 80° F.)	*These cements are chemical compounds of various ingredients such as: Asphalt with petroleum distillate; cellulose nitrate in acetone; bituminous asphalt and mineral oil; raw rubber solution and gasoline; etc., all possessing similar characteristics and hazards. Vapors highly inflammable and explosive when mixed in correct proportions with air. Sustained inhalation of vapors in unventilated compartments is dangerous.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C) not over 55 gal. cap. (ICC-17C 17E, 17H) STC not over 30 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 30 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap.	Ferry stowage (AA) Outside containers: Steel barrels or dums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 22B, 22A, 22B) not over 1 gal. cap.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Cement, container, liquid		Red				
Cement, linoleum		Red				
Cement, liquid, N. O. S.		Red				
Cement pyroxylin		Red				
Cement, roofing, liquid		Red				
Cement, rubber (When possessing a flashpoint at or below 80° F.)		Red				
Cement, tile		Red				
Cement, wallboard		Red				
Coating solution		Red				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Cigar and cigarette lighter fluid.	A mixture of several of the lighter constituents of petroleum. Flashpoint variable depending on mixture used, but less than 80° F. Immiscible with water.	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC–17X) not over 55 gal. cap. Wooden boxes (ICC–15X) WIMC, not over 10 gal cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiber or plywood drums (ICC–21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes (ICC–15X) WIMC, not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Coal tar distillate Coal tar oil. (When possessing a flashpoint at or below 80° F.)	*Distillates of coal tar. The lighter distillates are highly inflammable and will consist of benzene, toluene and xylene.* *Properties and hazards similar to "Coal tar naphtha," which see below.* *Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G), not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Coal tar naphtha Naphtha solvent. (When possessing a flashpoint at or below 80° F. but not less than 20° F.)	*Immiscible with water.* *Mixtures of small amounts of benzene and toluene with xylene. The crude is a dark straw colored liquid and the refined is a water white liquid.* *Flashpoint ranges between 60° F. and 77° F.* *Mixtures of vapor in air are explosive over a range of 1.3% to 8%.* *Vapors are heavier than air.* *Vapors are poisonous and suffocating.* *Immiscible with water.*	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Collodion	*Solution of tetranitrocellulose in ether, alcohol or other solvent. Pale yellow liquid. Flashpoint approximately 0° F. Immiscible with water.* Keep cool.	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside container: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap (ICC-17C) STC not over 55 gal. cap. (ICC-17E) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Compounds, cleaning, liquid.	*May consist of volatile inflammable solvents having low flashpoints.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Carbon remover, liquid		Red.				
Cleaning fluid or liquid		Red.				
Compounds, type-cleaning, liquid.		Red.				
Compounds, vulcanizing, liquid.		Red.				
Eradicators, paint or grease, liquid. (When possessing a flashpoint at or below 80° F.)		Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Compounds, lacquer, paint, or varnish, etc., removing, reducing or thinning, liquid. (When possessing a flashpoint at or below 80° F.)	*Compounds which through solvent or detergent action remove old paint from surfaces.* *Exceptionally slow-drying thinners used with pyroxylin base lacquer or enamels to retard speed of drying.* *Clear liquid solvents and diluents for the reduction of primers, surfacers, and enamels to proper working consistencies.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC–42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums: (ICC–17E, 17H) STC, not over 55 gal. cap. (ICC–37E) STC, not over 8½ gal. cap. Wooden barrels or kegs (ICC–10A, 10B, 10C) not over 50 gal. cap. Fiberboard boxes (ICC–12E), WIMC, not over 110 lb. gr. wt. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC–42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC–42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC–42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums: (ICC–17E, 17H) STC, not over 55 gal. cap. (ICC–37E) STC, not over 8½ gal. cap. Wooden barrels or kegs (ICC–10A, 10B, 10C) not over 50 gal. cap. Fiberboard boxes (ICC–12E) WIMC, not over 110 lb. gr. wt. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.
Compounds, enamel		Red.				
Lacquer removing, reducing and thinning compounds.		Red.				
Paint, lacquer and varnish removing, reducing or thinning compounds.		Red.				
Varnish remover or reducer.		Red.				
Varnish thinning compounds. (When possessing a flashpoint at or below 80° F.)		Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Compounds, tree or weed killing, liquid.	*Flashpoint variable*.....	Red.....	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums: (ICC-17X) STC not over 55 gal. cap. Wooden boxes: (ICC-15X) WIMC not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 30 gal cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 30 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap.	Ferry stowage (AA)..... Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums: (ICC-17X) STC not over 55 gal. cap. Wooden boxes: (ICC-15X) WIMC not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Crotonaldehyde	*This material is in the form of a clear and almost colorless liquid, having a vapor extremely irritating to the eyes, nose and throat. Easily detected odor. Flashpoint about 55° F. Vapors about 2½ times heavier than air. Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B), not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Crude oil, petroleum (when possessing a flashpoint at or below 80° F.).	*Crude petroleum in its natural state or which has been subject only to natural weathering or settling and not blended with any other product.* *A heavy, oily liquid, having color varying from green to almost black. It usually has a disagreeable odor, and varies in inflammability according to percentage of more volatile ingredients.* *Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC not over 55 gal. cap. (ICC-17E) STC not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Not permitted	Not permitted	Ferry stowage (BB). Outside containers: Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Cyclohexane	*A clear, volatile liquid having a pungent odor.* *Flashpoint below 20° F.* *Forms inflammable or explosive mixtures with air.* *Immiscible with water.* Stow well away from all sources of heat.	Red	Stowage: "On deck protected." "On deck under cover." "Tween docks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Cyclopentane	*Colorless liquid having organic odor.* *Moderately volatile.* *Flashpoint below 20° F.* *Forms inflammable and explosive mixture with air.* *Immiscible with water.* Stow well away from all sources of heat.	Red.				
Cyclopentane, methyl	*Colorless liquid having organic odor.* *Moderately volatile.* *Flashpoint below 20° F.* *Forms inflammable or explosive mixtures with air.* *Immiscible with water.* Stow well away from all sources of heat.	Red.				
Diethylamine	*Clear, colorless liquid* *Flashpoint below 0° F.* *Miscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes WIMC (ICC-15X) not over 10 gal. cap.	Not permitted	Not permitted	Not permitted.
Dimethyl sulfide	*A clear, volatile liquid having an offensive disagreeable odor.* *Will evolve sulfur dioxide gas in a fire.* *Boils at approximately 97° F.* *Immiscible with water.*	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Dimethylamine aqueous solution.	*An aqueous solution of an inflammable gas having a fishy, ammoniacal odor. Flashpoint of 25% solution 38° F. Boiling point 45° F.*	Red	Stowage: "On deck protected." "On deck under cover." Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 10 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard Boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.
Monomethylamine aqueous solution.	Properties similar to above	Red.				
Trimethylamine aqueous solution.	Properties similar to above	Red.				
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Drugs, chemicals, medicines, or cosmetics, N. O. S. A unit substance or a compound classified as an inflammable liquid in accordance with the definition contained herein, when prepared, packed and offered to the trade as drugs, chemicals, medicines, or cosmetics. In quantity exceeding 1 pint or 16 ounces by weight, in glass or earthenware containers, or 1 quart or 32 ounces by weight in inside metal containers. The following substances shall not be shipped under this designation: Acrolein. Carbon bisulfide (disulfide). Ethyl chloride. Ethyl trichlorosilane. Ethylene oxide. Inflammable liquids (flammable liquids) which are also corrosive liquids or oxidising materials under these regulations. Lithium aluminum hydride (ethereal). Nickel carbonyl. Pentaborane. Spirits of nitroglycerin in excess of 1 percent by weight. Trichlorosilane. Zinc ethyl. Ethylene imine, inhibited. Zirconium, metallic, solutions or mixtures thereof, liquid. Amyl mercaptan. Butyl mercaptan. Ethyl mercaptan. Aliphatic mercaptan mixtures. Isopropyl mercaptan. Propyl mercaptan. Vinyl trichlorosilane.		Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes WIC, (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC, (ICC-12A, 12B) not over 65 lbs. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap. Containers authorized only for liquids having a flashpoint above 20° F. Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10B) not over 50 gal. cap. Fiberboard boxes, WIMC (ICC-12E) not over 110 lb. gr. wt.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes WIC, (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC, (ICC-12A, 12B) not over 65 lbs. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes WIC, (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC, (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC, (ICC-12A, 12B) not over 65 lbs. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes WIMC (ICC-15X) not over 10 gal. cap. Containers authorized only for liquids having a flashpoint above 20° F. Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10B) not over 50 gal cap. Fiberboard boxes, WIMC (ICC-12E) not over 110 lb. gr. wt.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Ether	*Colorless, volatile liquid, pleasant aromatic odor.* *Suffocating and poisonous.* *The vapor of ether mixed with air is explosive over a very wide range of 1.8% to 48%.* *Vapor is 2.5 times heavier than air and will ignite at a considerable distance from the source of leakage.* *Flashpoint −49° F.* *Boiling point about 95° F.* *Immiscible with water.* Keep cool.	Red	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C) STC, not over 55 gal. cap. (ICC–17E) STC, not over 5 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–5, 5B) not over 30 lb. net wt. (ICC–17C, 17E) STC, not over 30 lb. net wt. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. NOTE: Total number of one or both type packages shall not exceed ten (10) on any voyage.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–5, 5B) not over 30 lb. net wt. (ICC–17C, 17E) STC, not over 30 lb. net wt. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. NOTE: Total number of one or both type packages shall not exceed ten (10) on any voyage.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5B) not over 30 lb. net wt. (ICC–17C, 17E) STC, not over 30 lb. net wt. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. NOTE: Total number of one or both type packages shall not exceed ten (10) on any voyage.
Ether, ethyl (sulfuric)	*Characteristic properties and cautions similar to "Ether," see above.*	Red.				
Ethyl methyl ether	*Characteristic properties and cautions similar to "Ether," see above.*	Red.				
Ethyl acetate	*Colorless, volatile liquid having a characteristic fruity odor.* *Vapors are 3 times heavier than air and form an explosive mixture within a range of 2½% to 11% in air.* *Flashpoint at or about 24° F.* *Boiling point 170° F.* *Immiscible with water.* Keep cool.	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Ethyl formate	*Colorless inflammable liquid. Vapors when mixed with air are explosive over a range of 5.5% to 16.5%, and are about 2½ times heavier than air. Flashpoint about 10° F. Boiling point 130° F. Soluble in water.* Keep cool.	Red	Stowage: "On deck protected." "On deck under cover." "Twen decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.
Ethyl methyl ketone. Methyl ethyl ketone. Methyl vinyl ketone, inhibited. NOTE: Methyl vinyl ketone, inhibited, in a glass or metal container not over 4 fluid ounces each, packed in a strong wooden or fiberboard box, is exempt from specification packaging, marking other than name of contents, and labeling requirements.	*Colorless liquid, acetone-like odor. Sustained inhalation of vapors in unventilated compartments is dangerous. Vapors are about 2½ times heavier than air and form an explosive mixture within a range of 2% to 12% in air. Flashpoint approximately 30° F. Miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Twen decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Ethyl nitrate (*nitric ether*).	*Colorless, inflammable liquid, pleasant odor and sweet taste. Vapors are more than 3 times heavier than air and will form an explosive mixture with a lower limit of 3.8% in air. Sustained inhalation of vapors in unventilated compartments is dangerous. Flashpoint approximately 50° F. Immiscible with water.*					

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Ethyl nitrite (*Nitrous ether*).	*Yellowish liquid, aromatic odor. Exceedingly volatile. Vapors are about 3 times heavier than air and form an explosive mixture within a range of 3% to 50% in air. Flashpoint about —31° F. Boiling point 61.5° F. Spontaneously decomposes at 194° F. Immiscible with water.* Keep cool. Stow well away from all sources of heat.	Red	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums (ICC–5, 5A, 5B, 5C, 5G, 5M) not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC–42B, 42C) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.
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Ethylene dichloride. Dichlorethylene.	*Colorless, oily liquid, pleasant chloroform-like color. Anesthetic; vapors in low concentrations will be suffocating. Vapors are 3½ times heavier than air and form an explosive mixture within a range of 6% to 16% in air. Flashpoint 70° F. Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Gas drips, hydrocarbon	*Liquid condensate of gas.* *Has odor of illuminating gas.* *Flashpoint variable but usually low.* *Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	NOTE: Shall not be accepted for transportation on board passenger vessels or passenger-carrying ferry vessels except such fuel as is contained within the fuel tanks of motor vehicles for use as a source of motive power for their own propulsion on and off the vessel, or for auxiliary equipment when such motor vehicles are being transported on board such vessels.		
Gasoline Permitted shipping names for export only: Essence. Gazoline. Motor fuel. Motor spirit. Petrol. Benzine. Gazolina. Nafta.	*Derivative of crude petroleum* *Vapor is 3 to 4 times heavier than air and when mixed with air is explosive over a range of 1.4% to 6%.* *Flashpoint less than 0° F.* *Immiscible with water and will float on surface.*	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Heptane	*Colorless, volatile liquid having organic odor. Forms inflammable or explosive mixtures with air. Flashpoint about 25° F. Boiling point about 208° F. Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Hexane	*Colorless, extremely volatile liquid having organic odor. Forms inflammable or explosive mixtures with air. Flashpoint below 0° F. Boiling point about 156° F. Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Inflammable liquids, N. O. S. Flammable liquids, N. O. S.	*May be any liquid classifying as an inflammable liquid in accordance with the definitions contained in these regulations, provided such inflammable liquid is not otherwise specified by name in these regulations.* *Flashpoint variable, may be less than 0° F.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes. WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap. (See note in columns 5, 6, and 7.)	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with flash point exceeding 20° F. Wooden barrels or kegs, (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with flash point exceeding 20° F. Wooden barrels or kegs, (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each (ICC-37P) NRC, not over 5 gal. cap. for liquids with flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars compliyng with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.

NOTE: Specification containers shall be of a design and constructed of materials that will not react dangerously with nor be decomposed by the chemical packed therein.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Ink (when possessing a flashpoint at or below 80° F.).	*A fluid or viscous material containing coloring matter in solution or suspension. Flashpoint variable.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for ink with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for ink with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for ink with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for ink with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Insecticide, liquid (*vermin exterminator*) (when possessing a flashpoint at or below 80° F.). NOTE: Insecticides having a flashpoint at or below 20° F. shall not be offered for transportation or be transported on board passenger-carrying vessels.	*Insecticides frequently contain petroleum or coal tar distillates or other inflammable liquids.* *Flashpoint variable.* *Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC—5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC—17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Isooctane	*Clear, colorless, slightly volatile liquid having an organic odor. Vapors much heavier than air. Flashpoint below 20° F. Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Isooctene	*Clear, colorless liquid having an organic odor. Vapors heavier than air. Flashpoint below 20° F. Immiscible with water.*	Red.				
Isopentane	*Clear, colorless, very volatile liquid having an organic odor. Vapors heavier than air. Flashpoint below −60° F. Boiling point about 31° F. Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.
Isoprene	*Clear, colorless, very volatile liquid having an organic odor. Vapors form inflammable or explosive mixture with air. Flashpoint below −0° F. Boiling point about 93° F. Immiscible with water.*	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Isopropyl acetate	*Colorless, aromatic liquid. Slightly miscible with water. Flashpoint 36° F.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 16 gal. cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Lacquer base or lacquer chips, plastic (wet with alcohol or solvent). Wet with at least 20% by weight of alcohol or solvent with a flashpoint not lower than 80° F. (When possessing a flashpoint at or below 80° F.)	*Lacquer chips are composed of nitrocellulose incorporated with a plasticizer and pigments. They are the film-forming part of lacquer which remains after the solvents or thinners have evaporated.* *Involved in fire will give off nitrous fumes which are deep orange in color and extremely poisonous.* *Flashpoint is variable depending upon the solvent used to wet the chips.* *Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C, 6J) not over 450 lb. gr. wt. (ICC-17C, 17E, 17H) STC, not over 450 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 450 lb. gr. wt. Wooden barrels or kegs: (ICC-10A, 10B) not over 450 lb. gr. wt. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C, 6J) not over 450 lb. gr. wt. (ICC-17C, 17E, 17H) STC, not over 450 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C, 6J) not over 450 lb. gr. wt. (ICC-17C, 17E, 17H) STC, not over 450 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 450 lb. gr. wt. Wooden barrels or kegs: (ICC-10A, 10B) not over 450 lb. gr. wt. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C, 6J) not over 450 lb. gr. wt. (ICC-17C, 17E, 17H) STC, not over 450 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 450 lb. gr. wt. Wooden barrels or kegs: (ICC-10A, 10B) not over 450 lb. gr. wt. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC-12A, 12B) not over 65 lb. gr. wt. (ICC-12E) WIMC not over 110 lb. gr. wt.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Methyl acetate	*A clear, colorless, volatile liquid with fragrant odor. Vapors are 2½ times heavier than air and form an explosive mixture within a range of 4% to 14% in air. Flashpoint about 20° F. Boiling point about 132° F. Slightly miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes, (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums, (ICC-21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Methyl acetone	*A water-white, anhydrous liquid consisting of acetone with methanol. Flashpoint variable, may be as low as 4° F. Miscible with water.*	Red.				
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Methyl formate	*Colorless liquid, agreeable odor. Vapor pressure 18 lbs. at 100° F. Vapors 2 times heavier than air and form an explosive mixture within a range of 4½% to 23% in air. Sustained inhalation of vapors in an unventilated compartment is dangerous. Flashpoint −25° F. Boiling point 88° F. Slightly miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Methyl iso-propenyl ketone, inhibited.	*Nearly colorless, inflammable liquid, with a pleasant odor and sweet taste.* *Sustained inhalation of vapors in unventilated spaces is dangerous.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Methyl methacrylate monomer.	*A water white liquid of low viscosity.* *Flashpoint about 55° F.* May polymerize spontaneously without addition of an inhibitor.	Red.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipment: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes (ICC-15X) WIMC, not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-17H, 37A) WIC of glass not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipment: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes (ICC-15X) WIMC, not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Motor fuel, N. O. S. (when possessing a flashpoint at or below 80° F.)	*Any fuel for internal combustion motors not otherwise specified by name in these regulations.* *Vapors when mixed with air may be explosive over a wide range.* *Flashpoint variable.* *May or may not be miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Not permitted	Not permitted	Not permitted.

NOTE: Shall not be accepted for transportation on board passenger vessels or passenger-carrying ferry vessels except such fuel as is contained within the fuel tanks of motor vehicles for use as a source of motive power for their own propulsion on and off the vessel, or for auxiliary equipment when such motor vehicles are being transported on board such vessels.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Neohexane	*Clear, water-white, rather volatile liquid.* *Vapors form inflammable or explosive mixtures with air.* *Flashpoint below 0° F.* *Immiscible with water.* *Boiling point about 120° F.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Not permitted	Not permitted	Not permitted.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Oil: Oil, N. O. S. Petroleum oil. Petroleum oil, N. O. S. (When possessing a flashpoint at or below 80° F. but not less than 20° F.) NOTE: For these liquids when possessing a flashpoint at or below 20° F., see "Petroleum distillate."	*May include any oil product derived from crude petroleum, except oils properly described by name within these regulations.* *Flashpoint variable.* *Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) STC, not over gal. cap. for liquid having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) STC, not over 5 gal. cap. for liquid having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) STC, not over 5 gal. cap. for liquid having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) STC, not over 5 gal. cap. for liquid having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Paint, enamel, lacquer, stain, shellac, varnish, aluminum, bronze, gold, wood filler, liquid, and lacquer base liquid.	*Flashpoint variable. May or may not be miscible with water.*	Red.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E), STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for liquids having a flashpoint exceeding 20° F. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums: (ICC-17E, 17H) STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap. Wooden barrels or kegs (ICC-10A, 10B, 10C) not over 50 gal. cap. Fiberboard boxes (ICC-12E), WIMC, not over 110 lb. gr. wt. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for liquids having a flashpoint exceeding 20° F. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for liquids having a flashpoint exceeding 20° F. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. for liquids having a flashpoint exceeding 20° F. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums: (ICC-17E, 17H) STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap. Wooden barrels or kegs (ICC-10A, 10B, 10C) not over 50 gal. cap. Fiberboard boxes (ICC-12E) WIMC, not over 110 lb. gr. wt. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap.
Aluminum liquid (or paint).		Red.				
Bronze liquid (or paint).		Red.				
Driers, paint, varnish, enamel, etc.		Red.				
Enamel		Red.				
Furniture or wood stain, liquid.		Red.				
Gold paint		Red.				
Lacquer		Red.				
Lacquer base liquid		Red.				
Leather bleach		Red.				
Leather dressing		Red.				
Mortar stain, liquid		Red.				
Paint driers, liquid		Red.				
Shellac		Red.				
Shellac, liquid		Red.				
Stain		Red.				
Varnish		Red.				
Varnish driers		Red.				
Wood filler		Red.				
Wood stains, liquid		Red.				
(When possessing a flashpoint at or below 80° F.) When the flashpoint of a liquid shipped under this descriptive name is 20° F. or below, the bill of lading or other shipping paper shall bear the following certification: *"This liquid possesses a flashpoint of 20° F. or less."* When the flashpoint is above 20° F. and not more than 80° F. the following certification shall appear hereon: *"This liquid possesses a flashpoint of above 20° F. but not more than 80° F."*						
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Pentane	*A clear colorless, volatile liquid obtained from petroleum.* *Vapors when mixed with air are explosive over a range of approximately 1.4% to 8.0% in air.* *Flashpoint below 0° F.* *Boiling point 86° F. to 104° F.* *Immiscible with water.* Keep cool.	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 5M) not over 55 gal. cap. (ICC–17C) STC, not over 55 gal. cap. (ICC–17E) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC–42B, 42C) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments of petroleum distillate or naphtha distillate: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.	Not permitted	Not permitted	Not permitted.
Pentane methyl	*A clear, colorless, volatile liquid having an organic odor.* *Vapors form inflammable or explosive mixtures with air.* *Flashpoint below 0° F.* *Boiling point about 135° F.* *Immiscible with water.* Keep cool.	Red.				
Petroleum distillate..... Naphtha distillate. (When possessing a flashpoint at or below 80° F.)	*Any petroleum distillate not otherwise named in these regulations that is not used as motor fuel for internal combustion engines.* *Flashpoint variable.* *Vapors when mixed with air are explosive over a wide range.* *Immiscible with water.*	Red.				
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Polishes, metal, stove, furniture and wood, liquid. (When possessing a flashpoint at or below 80° F.)	*Liquid preparations used to remove film from surfaces and restore and protect polish and finish of such surface. Flashpoint variable. May or may not be miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E,) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. for liquids having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. (ICC–42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums (ICC–17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC–10A, 10B) not over 50 gal. cap. Fiberboard boxes (ICC–12E) WIMC, not over 110 lb. gr. wt. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal .cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. for liquids having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. (ICC–42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. for liquids having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. (ICC–42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC–5M, 6A) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. for liquids having a flash point exceeding 20° F. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. (ICC–42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC–11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums (ICC–17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC–10A, 10B) not over 50 gal. cap. Fiberboard boxes (ICC–12E) WIMC, not over 110 lb. gr. wt. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC–15X) not over 10 gal. cap.
Compounds, polishing, liquid.		Red.				
Furniture polish		Red.				
Metal polish, liquid		Red.				
Stove polish, liquid		Red.				
Wood polish, liquid. (When possessing a flashpoint at or below 80° F.)		Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Propylene oxide	*Colorless liquid, ethereal odor. Explosive range: 2 to 22% in air. Flashpoint below 0° F. Miscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C) STC, not over 55 gal. cap. (ICC–17E) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 1 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Pyridine (When possessing a flashpoint at or below 80° F.).	*A slightly yellow or colorless liquid having a penetrating and offensive odor. Vapors are 2.75 times heavier than air and form an explosive mixture within a range of 1.8 to 12.4% in air. Vapors are poisonous and suffocating. Flashpoint 68° F. Miscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums, WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC–15, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC–12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC not over 16 gal. cap. Wooden boxes, WIC (ICC–15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC: (ICC–12A, 12B) not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums WIC (ICC–21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Pyroforic fuel. Pyroforic solutions.	*Highly inflammable.* *Takes fire on contact with air.* Keep cool.	Red	Stowage: "On deck protected." Outside containers: Cylinders as prescribed for any compressed gas except acetylene.	Not permitted	Not permitted	Not permitted.
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Resin solution (when possessing a flashpoint at or below 80° F.).	*Resin dissolved in a volatile solvent.* *Flashpoint variable, depending upon the solvent used.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr.wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums: (ICC-17X) STC not over 55 gal. cap. Wooden boxes: (ICC-15X) WIMC not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 5M, 6A, 6B, 6C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 30 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 30 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIC not over 1 gal. cap.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37A, 37B) STC not over 5 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C, 42F) not over 110 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC not over 16 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC not over 65 lb. gr. wt. Fiber or plywood drums: (ICC-21A, 21B 22A, 22B) WIC not over 1 gal. cap. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums: (ICC-17X) STC not over 55 gal. cap. Wooden boxes: (ICC-15X) WIMC not over 10 gal. cap.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Road asphalt or tar, liquid. *Asphalt cut-back.* Tar, liquid. (When possessing a flashpoint at or below 80° F.) (See §146.27-100 for transportation of asphalt or road tar in highway tank vehicles.)	*Substance prepared by the fluxing of asphalt with petroleum distillate.* *Pungent, penetrating odor.* *Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC, (ICC-15X) not over 10 gal. cap. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10A, 10B, 10C) not over 50 gal. cap. Fiberboard boxes (ICC-12E) WIMC not over 110 lbs. gr. wt.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, 6B, 6C) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G, BC) not over 110 gal. cap. (ICC-5M, 6A) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums: (ICC-42B, 42C) not over 110 gal. cap. (ICC-42F) not over 55 gal. cap Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap. Authorized only for liquids having a flashpoint above 20° F.: Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10A 10B, 10C) not over 50 gal. cap. Fiberboard boxes (ICC-12E) WIMC, not over 110 lbs. gr. wt.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Sodium methylate, alcohol mixture. (When possessing a flashpoint at or below 80° F.)	*Sodium methylate dissolved in alcohol.* *Flash point variable.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes WIMC (ICC-15X) not over 10 gal. cap. Containers authorized only for liquids having a flashpoint above 20° F. Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10B) not over 50 gal. cap. Fiberboard boxes WIMC, not over 110 lb. gr. wt.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap. Containers authorized only for liquids having a flashpoint above 20° F. Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10B) not over 50 gal. cap. Fiberboard boxes WIMC, not over 110 lb. gr. wt.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Solvents, N. O. S. (When possessing a flashpoint at or below 80° F.)	*Inflammable, volatile liquids used for solvents, other than those solvents specified by name in these regulations. May be extremely volatile liquids and if so, vapors in air will form explosive mixtures. Vapors may be poisonous and suffocating. Flashpoint variable.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X) not over 10 gal. cap. Containers authorized only for liquids having a flashpoint above 20° F. Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10B) not over 50 gal. cap. Fiberboard boxes WIMC, not over 110 lb. gr. wt.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: (Authorized only for liquids having a flashpoint above 20° F.) Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) nor over 65 lb. gr. wt. Fiber or plywood drums WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17E) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. for liquids with a flash point exceeding 20° F. Aluminum barrels or drums (ICC-42B 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC, (ICC-21A, 21B, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X STC, not over 55 gal. cap. Wooden boxes, WIMC (ICC-15X not over 10 gal. cap. Containers authorized only for liquids having a flashpoint above 20° F. Steel barrels or drums (ICC-17E, 17H) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC-10B) not over 50 gal. cap. Fiberboard boxes WIMC, not over 110 lb. gr. wt.
Plastic solvent, N. O. S.		Red.				
Pyroxylin solution		Red.				
Pyroxylin solvent, N. O. S. (When possessing a flashpoint at or below 80° F.)		Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Toluol (*Toluene.*)	*Colorless volatile liquid. Benzene-like odor, distillate from coal tar. Vapors are 3 times heavier than air and form an explosive mixture within a range of 1¼% to 7% in air. Vapors are poisonous and suffocating. Flashpoint 45° F. Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC-37P) NRC, not over 5 gal cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes WIMC (ICC-15X) not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC-37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. (ICC-12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC-21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC-17X) STC, not over 55 gal. cap. Wooden boxes (ICC-15X) WIMC not over 10 gal. cap.
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Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Turpentine substitutes... (When possessing a flashpoint at or below 80° F.)	*Special fractions of petroleum oils (usually with a boiling point of 260° to 320° F.) used in the place of turpentine as a paint thinner, etc.* *Flashpoint variable.* *Immiscible with water.*	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments of turpentine substitutes: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes (ICC–15X) WIMC, not over 10 gal. cap.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments of turpentine substitutes: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes (ICC–15X) WIMC, not over 10 gal. cap.
Vinyl acetate, inhibited.	*Clear, colorless liquid having a pungent odor.* *Soluble in most organic solvents.* *Flashpoint about 30° F.* *Immiscible with water.*	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Vinylidene chloride, inhibited.	*Clear, colorless to straw-colored, rather volatile liquid having a penetrating odor. Flashpoint below 20° F. Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC-5M) not over 55 gal. cap. (ICC-17C) STC, not over 55 gal. cap. (ICC-17H, 37A) WIC of glass, not over 9 pts. cap. each. Aluminum barrels or drums (ICC-42B, 42C) not over 110 gal. cap. Wooden barrels or kegs, WIC (ICC-11A, 11B) not over 16 gal. cap. Wooden boxes, WIC (ICC-15A, 15B, 15C, 16A, 19A, 19B) not over 10 gal. total cap. Fiberboard boxes, WIC (ICC-12A, 12B) not over 65 lb. gr. wt. Fiber or plywood drums, WIC (ICC-21A, 22A, 22B) not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Wet nitrocellulose colloided, granular or flake (must contain at least 20%, by weight of alcohol or a solvent with flashpoint not lower than 30° F.).	*Formed by the nitration of cotton by treatment with a mixture of nitric and sulfuric acids.* *Involved in a fire will give off nitrous fumes, deep orange in color, and extremely irritating and poisonous.* *Flashpoint variable, not less than 30° F.* Keep cool. Check gross weight of containers to be certain no leakage has occurred. Refuse leaking containers or ones showing signs of having leaked.	Red	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G, 5M) not over 450 lb. gr. wt. (ICC–6A, 6B, 6C, 6J) not over 450 lb. gr. wt (ICC–17C, 17E, 17H) STC, not over 450 lb. gr. wt., (ICC–37A, 37B) STC, not over 5 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 450 lb. gr. wt. Wooden barrels or kegs: (ICC–10A, 10B) not over 450 lb. gr. wt. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Authorized only for nitrocellulose or collodion cotton, fibrous, wet, or colloided nitrocellulose, granular or flake, wet: Aluminum barrels or drums (ICC–42F) not over 450 lb. gr. wt.	Not permitted	Not permitted	Not permitted.
Wet nitrocellulose (must contain at least 30% by weight of alcohol or a solvent with a flashpoint not lower than 30° F.).		Red.				
Wet nitrostarch (must contain at least 30% by weight of alcohol or a solvent with flashpoint not lower than 30° F.). Shipping containers on above shall have marked thereon the gross, tare, and net weight of the package.	*Formed by the nitration of starch. Characteristics and hazards similar to those of "Nitrocellulose, wet with an inflammable liquid," which see above.* Keep cool. Check gross weight of containers to be certain no leakage has occurred. Refuse leaking containers or ones showing signs of having leaked.	Red.				

Table D—Classification: Inflammable liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Xylol (Xylene.) (When possessing a flashpoint at or below 80° F.)	*Coal tar distillate. Colorless liquid having a characteristic odor. Vapors are 4 times heavier than air and will form an explosive mixture in air. Vapors are poisonous and suffocating. Flashpoint 75° F. or above. Immiscible with water.*	Red	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass, not over 9 pts. cap. each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes WIMC (ICC–15X) not over 10 gal. cap. • • •	Stowage: "On deck protected." "On deck under cover." Outside containers: Steel barrels or drums: (ICC–17H, 37A) WIC of glass, not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. • • •	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. • • •	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 5C, 5G) not over 110 gal. cap. (ICC–5M) not over 55 gal. cap. (ICC–17C, 17E, 17H) STC, not over 55 gal. cap. (ICC–17H, 37A) WIC of glass not over 9 pints capacity each. (ICC–37P) NRC, not over 5 gal. cap. Aluminum barrels or drums (ICC–42B, 42C) not over 110 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 16 gal. cap. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A, 19B) WIC, not over 10 gal. total cap. Fiberboard boxes: (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. (ICC–12E) WIMC, not over 110 lb. gr. wt. Fiber or plywood drums (ICC–21A, 21B, 22A, 22B) WIC, not over 1 gal. cap. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for export shipments: Steel barrels or drums (ICC–17X) STC, not over 55 gal. cap. Wooden boxes WMIC (ICC–15X) not over 10 gal. cap. • • •
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(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING INFLAMMABLE SOLIDS AND OXIDIZING MATERIALS

1. Section 146.22–15 is amended by changing (a) to read as follows:

§ 146.22–15 *Mixed stowage of oxidizing materials.* • • •

(a) These substances shall not be stowed in the same compartment or hold in which explosives are stowed except nitro carbo nitrate may be stowed in the same hold or compartment with magazines containing dynamite, commercial boosters, and/or other non-priming, non-initiating types of explosives that are compatible with dynamite.

2. Section 146.22–35 is amended by deleting the present text (revised requirements transferred to 46 CFR 98.05) and inserting the following in lieu thereof:

§ 146.22–35 *Elemental phosphorus in water in bulk.* (a) Elemental phosphorus, white or yellow, in water may be carried in bulk only in inspected and certificated cargo barges, tank barges, or cargo vessels. For applicable requirements, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

3. Section 146.22–100 *Table E—Classification: Inflammable solids and oxidizing materials* is amended as follows:

§ 146.22–100 *Table E—Classification: Inflammable solids and oxidizing materials*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
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Calcium hypochlorite compounds, dry, containing more than 39 percent available chlorine. Lithium hypochlorite compounds, dry, containing more than 39 percent available chlorine.	*White powder.* *Decomposed by moisture.* *If exposed to excessive heat, or to the rays of the sun, it may decompose spontaneously evolving vapor with sufficient pressure to rupture container.* *The vapors from ruptured containers have been known to ignite spontaneously.* *When exposed it gives off pungent vapors (chlorine) that are corrosive.* *May destroy textiles.* Do not stow in the same compartment with corrosive liquids (white label) nor with turpentine. Stow well away from foodstuffs, living quarters, and all sources of artificial heat. Keep dry and cool.	Yellow	Stowage: "On deck protected." "On deck under cover." "Tween decks." "Under deck, but not overstowed." Outside containers: Steel barrels or drums: (ICC–6A, 6B, 6C) not over 55 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Strong wooden or fiberboard packages with inside metal containers not over 5 lb. cap. each. Outside wooden containers not to exceed 150 lb. gross weight and outside fiberboard containers not to exceed 65 lb. gross weight. Inside metal containers not over 7½ lb. cap. each are authorized for material in tablet form only.	Stowage: "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–6A, 6B, 6C) not over 55 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Strong wooden or fiberboard packages with inside metal containers not over 5 lb. cap. each. Outside wooden containers not to exceed 150 lb. gross weight and outside fiberboard containers not to exceed 65 lb. gross weight. Inside metal containers not over 7½ lb. cap. each are authorized for material in tablet form only.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC–6A, 6B, 6C) not over 55 gal cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Strong wooden or fiberboard packages with inside metal containers not over 5 lb. cap. each. Outside wooden containers not to exceed 150 lb. gross weight and outside fiberboard containers not to exceed 65 lb. gross weight. Inside metal containers not over 7½ lb. cap. each are authorized for material in tablet form only.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–6A, 6B, 6C) not over 55 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Strong wooden or fiberboard packages with inside metal containers not over 5 lb. cap. each. Outside wooden containers not to exceed 150 lb. gross weight and outside fiberboard containers not to exceed 65 lb. gross weight. Inside metal containers not over 7½ lb. cap. each are authorized for material in tablet form only.
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Caprylyl peroxide solution.	*Straw-colored liquid with sharp odor.* *Burns extremely rapidly when ignited, even by external flame.* *Decomposes suddenly at about 194° F.* *Immiscible with water.* Do not stow with explosives, combustible materials, or acids. Keep cool.	Yellow	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Wooden boxes, (ICC–15A, 15B, 15C, 16A, 19A), WIC, not over 250 lb. gr. wt. Fiberboard boxes, (ICC–12B) WIC, not over 1 gal. cap. Authorized only for material which will not react dangerously with, or cause decomposition of polyethylene: Steel barrels or drums: (ICC–5B,6J, 37A) STC, WIC (ICC–2S polyethylene) not over 15 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Following barrels and drums authorized for materials which will not react dangerously with the drum's metal, or be decomposed by contact with it: Steel barrels or drums: (ICC–17C, 17E) STC, not over 15 gal. cap. Aluminum drums: (ICC–42B) not over 15 gal. cap.	Not permitted.	Not permitted.	Not permitted.
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Table E—Classification: Inflammable solids and oxidizing materials—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Chlorate and borate mixtures. Chlorate and magnesium chloride mixtures. NOTE: Such mixtures containing 28% or less chlorate and no other hazardous additives are not subject to the regulations in this part.	*Mixtures of chlorates and borates or magnesium chloride in varying proportions containing no other hazardous additives.*	Yellow	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Mixtures containing 50% or more chlorate may be accepted in: Steel barrels or drums: (ICC-6A) not over 55 gal. cap. (ICC-6B, 6C) not over 110 gal. cap. (ICC-17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 50 gal. cap. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 250 lb. gr. wt. Fiberboard boxes: (ICC-12B) WIMC, not over 25 lb. net wt. Fiber or plywood drums: (ICC-21A, 21B, 22A, 22B) WIMC ICC-2F, not over 220 lb. gr. wt. Mixtures containing more than 28% chlorate but less than 50% may also be accepted in: Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIL, not over 600 lb. net wt. Wooden boxes: (ICC-15A, 15B) WIL, not over 250 lb. gr. wt. Fiberboard boxes, WIC, not over 4 lb. net wt. each; gr. wt. of box not over 65 lb. Fiber or plywood drums: (ICC-21A, 21B, 22A) not over 220 lb. gr. wt. Multiwall paper bags: (ICC-44C, 44D) not over 50 lb. net wt.	Not permitted	Not permitted	Not permitted.
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Dimethylhexane dihydroperoxide, dry.	*Finely divided white powder.* *Inflammable and burns steadily when ignited.* *Will decompose at elevated temperatures.* Keep cool and dry. Do not stow with combustible materials, explosives or acids.	Yellow	Stowage: "On deck protected." "On deck under cover." Outside containers: Wooden boxes: (ICC-15A, 15B) WIC, not over 50 lb. net wt. Fiberboard boxes: (ICC-12B) WIC, not over 50 lb. net wt.	Stowage: "On deck under cover." Outside containers: Wooden boxes: (ICC-15A, 15B) WIC, not over 50 lb. net wt. Fiberboard boxes: (ICC-12B) WIC, not over 50 lb. net wt.	Ferry stowage (AA) Outside containers: Wooden boxes: (ICC-15A, 15B) WIC, not over 50 lb. net wt. Fiberboard boxes: (ICC-12B) WIC, not over 50 lb. net wt.	Ferry stowage (BB). Outside containers: Wooden boxes: (ICC-15A, 15B) WIC, not over 50 lb. net wt. Fiberboard boxes: (ICC-12B) WIC, not over 50 lb. net wt.

Table E—Classification: Inflammable solids and oxidizing materials—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Dimethylhexane dihydroperoxide, wet (*wet with at least 30 percent of water by weight*). Shipping containers must have marked thereon the gross and tare weights and the net weight of the contents.	*Finely divided white powder in water.* *Inflammable when dry.* Check gross weight of container to ascertain if leakage has occurred. Reject leaking containers or ones that show signs of having leaked.	Yellow	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Wooden boxes: (ICC-15A, 15B, 15C) WIC, not over 200 lb. gr. wt.	Stowage: "On deck under cover." Outside containers: Wooden boxes: (ICC-15A, 15B, 15C) WIC, not over 200 lb. gr. wt.	Ferry stowage (AA) Outside containers: Wooden boxes: (ICC-15A, 15B, 15C) WIC, not over 200 lb. gr. wt.	Ferry stowage (BB). Outside containers: Wooden boxes: (ICC-15A, 15B, 15C) WIC, not over 200 lb. gr. wt.
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Nitro carbo nitrate	*Composed principally of ammonium nitrate.* *Involved in a fire will greatly intensify the burning of all combustible material and under conditions of exposure to high temperatures (above 400° F.) rapid decomposition and ignition may occur. Will burn with explosive violence.* *Soluble in water.* Stow separate from all combustible material, explosives (except dynamite, commercial boosters, and/or other non-priming, non-initiating types of explosives which are compatible with dynamite may be stowed in a magazine located in the same hold or compartment) or acids and away from chlorates.	No label required.				
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Peroxides, organic, liquid, N. O. S. Peroxides, organic, solution, liquid, N. O. S.	*Combustible liquids, usually colorless, with sharp penetrating odor. Readily ignitable and burn with acceleration. Immiscible with water.* Do not stow with combustible materials, explosives or acids.	Yellow	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 250 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 1 gal. cap. Authorized only for material which will not react dangerously with, or cause decomposition of polyethylene: Steel barrels or drums (ICC-5B, 6J, 37A) STC, WIC (ICC-2S polyethylene) not over 15 gal. cap. Steel drums: (ICC-37P) NRC, not over 5 gal. cap. Following barrels and drums authorized for materials which will not react dangerously with the drum's metal, or be decomposed by contact with it: Steel barrels or drums: (ICC-17C, 17E) STC, not over 15 gal. cap. Aluminum drums: (ICC-42B) not over 15 gal. cap.	Not permitted	Not permitted	Not permitted.
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Table E—Classification: Inflammable solids and oxidizing materials—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Phosphorus, white or yellow, in water. Shipping containers shall have marked thereon the gross, tare, and net weight of the package. NOTE: For bulk shipments, see subchapter I (cargo and miscellaneous vessels) of this chapter.	*Almost colorless or yellowish semitransparent mass becoming somewhat darker or white and waxy in appearance with aging.* *Melting point 110° F.* *Fumes are poisonous and possess a strong garlic-like odor.* *White or yellow phosphorus will ignite spontaneously in air.* *In event of breakage, do not handle this substance with bare hands.* Protect from freezing. Do not stow with explosives, inflammable liquids (red label), corrosive liquids (white label), nor with nitrates, chlorates, or permanganates. Stow away from living quarters and foodstuffs. Check gross weight of containers to be certain no leakage has occurred. Refuse leaking containers or ones showing signs of having leaked.	Yellow	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers—*When packed in water:* Steel barrels or drums: (ICC–5A, 6A, 6B) not over 30 gal. cap Wooden boxes: (ICC–15A, 15B) with hermetically sealed metal cans or metal linings, not over 250 lb. gr. wt. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Sodium nitrite	*A yellowish-white salt somewhat moist in appearance.* *It is an oxidizing material which while containing less oxygen than the nitrates, is more readily decomposed, and therefore generally more active.* *When mixed with organic matter, it is more readily ignited than a corresponding mixture of sodium nitrate.* *Sodium nitrite if mixed with ammonium salts decomposes spontaneously and may cause fires.* *Absorbs moisture.* *Soluble in water.* *Involved in a fire will greatly intensify the burning of all combustible materials.* Do not stow with ammonium nitrate. Stow away from all combustible materials, explosives or acids (white label).	Yellow	Stowage: "On deck protected." "On deck under cover." "Tween decks." "Under deck away from heat." Outside containers: Steel barrels or drums: (ICC–6A) not over 55 gal. cap. (ICC–6B, 6C) not over 110 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 600 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 250 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Fiber drums (ICC–21A, 21B) not over 425 lb. gr. wt. Plywood drums: (ICC–22A) not over 220 lb. gr. wt. (ICC–22B) WIMC, not over 220 lb. gr. wt. Multi-wall paper bags: (ICC–44C) WIL, not over 100 lb. net wt.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Steel barrels or drums: (ICC–6A) not over 55 gal. cap. (ICC–6B, 6C) not over 110 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 600 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 250 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Fiber drums (ICC–21A, 21B) not over 425 lb. gr. wt. Plywood drums: (ICC–22A) not over 220 lb. gr. wt. (ICC–22B) WIMC, not over 220 lb. gr. wt. Multi-wall paper bags: (ICC–44C) WIL, not over 100 lb. net wt.	Ferry stowage (AA) Outside containers: Steel barrels or drums: (ICC–6A) not over 55 gal. cap. (ICC–6B, 6C) not over 110 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 600 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 250 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Fiber drums (ICC–21A, 21B) not over 425 lb. gr. wt. Plywood drums: (ICC–22A) not over 220 lb. gr. wt. (ICC–22B) WIMC, not over 220 lb. gr. wt. Multi-wall paper bags: (ICC–44C) WIL, not over 100 lb. net wt.	Ferry stowage (BB). Outside containers: Steel barrels or drums: (ICC–6A) not over 55 gal. cap. (ICC–6B, 6C) not over 110 gal. cap. (ICC–17C, 17E, 17H, 37A, 37B) STC, not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 600 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 250 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Fiber drums (ICC–21A, 21B) not over 425 lb. gr. wt. Plywood drums: (ICC–22A) not over 220 lb. gr. wt. (ICC–22B) WIMC, not over 220 lb. gr. wt. Multi-wall paper bags: (ICC–44C) WIL, not over 100 lb. net wt.

Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 991; 3 CFR, (R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING CORROSIVE LIQUIDS

1. Section 146.23–35 is amended by deleting the present text (revised requirements transferred to § 98.10) and by inserting the following in lieu thereof:

§ 146.23–35 *Sulfuric acid in bulk.* (a) Sulfuric acid or spent sulfuric acid may be carried in bulk only in inspected and certificated cargo barges, tank barges, or cargo vessels. For applicable requirements, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

2. Section 146.23–50 is amended by deleting the present text (revised requirements transferred to § 98.15) and by inserting the following in lieu thereof:

§ 146.23–50 *Hydrochloric acid in bulk.* (a) Hydrochloric acid may be carried in bulk only in inspected and certificated cargo barges, tank barges, or cargo vessels. For applicable requirements, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

3. Section 146.23-100 *Table F—Classification: Corrosive liquids* is amended as follows:

§ 146.23-100 *Table F—Classification: Corrosive liquids*

Descriptive name of article	Characteristic properties, cautions, marking required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Acids, liquids, N. O. S.	*Any acid not otherwise specified by name herein which qualifies under the definition contained in these regulations as a corrosive liquid.* Protect from sparks and open flame. Keep cool.	White	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, glass, in boxes, kegs or plywood drums: (ICC-1A, 1B, 1C, 1E) not over 13 gal. cap. (ICC-1D) not over 6½ gal. cap. For export only (ICC-1X) not over 6 gal. cap. Carboys, lead, metal jacketed (ICC-2S) not over 15 gal. cap. Carboys, polyethylene, in plywood boxes, drums or wooden boxes (ICC-1F, 1G) not over 15 gal. cap. Metal barrels or drums: (ICC-5A, 5C, 5M) not over 110 gal. cap. (ICC-5D) rubber lined, not over 110 gal. cap. (ICC-5H) lead lined, not over 110 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 87A, 87B) STC, lined, not over 5 gal. cap. (ICC-6J) WIC ICC-28, polyethylene, not over 65 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. NOTE: Specification containers shall be of a design and construct of materials that will not react dangerously with nor be decomposed by the chemical packed therein.	Not permitted	Not permitted	Not permitted.

[F. R. Doc. 58-5135; Filed, June 27, 1958; 8:48 a. m.]

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Alkaline battery fluid	*Usually colorless, odorless, liquids.* *Neither volatile nor combustible.* *Hazardous in contact with certain textiles and metals.*	White	Stowage: "On deck protected," "On deck under cover." "On deck in open." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Portable tanks: (ICC-60) not over 8,000 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck under cover." "On deck in open." Outside containers: Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene. not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA) Outside containers: Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Steel barrels or dums (ICC-5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Portable tanks: (ICC-60) not over 8,000 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations.
Alkaline caustic liquids, N. O. S.	*Liquid used in alkaline storage batteries.* For characteristics and hazards see "Alkaline corrosive, liquids, N. O. S.	White.				
Alkaline, corrosive liquids, N. O. S.	*May be any alkaline corrosive liquid properly described as such in accordance with the definition for a corrosive liquid and not otherwise specified by name in these regulations.* *Particularly hazardous in contact with organic substances and textiles.* *Miscible with water.* These materials in inside containers of not more than 8 fluid ounces capacity each, packed and cushioned as specified by ICC regulations are exempt from specification packaging, marking other than name of contents, and labelling requirements.	White.				
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Antimony pentachloride, solution.	See "Antimony pentachloride."	White	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, glass, in boxes, kegs or plywood drums: (ICC–1A, 1B, 1C, 1E) not over 13 gal. cap. (ICC–1D) not over 6½ gal. cap. For export only (ICC–1X) not over 6 gal. cap. Carboys, lead, metal jacketed (ICC–2S) not over 15 gal. cap. Carboys, polyethylene, in plywood boxes, drums or wooden boxes (ICC–1F, 1G) not over 15 gal. cap. Metal barrels or drums: (ICC–5A, 5C, 5M) not over 110 gal. cap. (ICC–5D) rubber lined, not over 110 gal. cap. (ICC–5H) lead lined, not over 110 gal. cap. (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt.	Not permitted	Not permitted	Not permitted.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Benzoyl chloride	*A clear, colorless liquid which even at ordinary temperatures gives off a vapor very irritating to the eyes, nose, and throat. Decomposes on contact with water liberating fumes which are irritating to the mucous membrane and in sufficient quantities will be suffocating.* Keep dry.	White	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed; glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed: glass (ICC–1D) not over 6½ gal. cap. Carboys in kegs; glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, boxed; glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. (ICC–17C) STC, not over 55 gal. cap. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Portable tanks (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations. Unstabilized benzoyl chloride when anhydrous and free from impurities such as iron may be shipped in: Nickel drums (ICC–5K) not over 55 gal. cap.	Not permitted	Not permitted	Not permitted.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Benzyl chloride	*A colorless liquid possessing a rather unpleasant odor and vapors which are very irritating to the eyes, nose, and throat.* *Combustible. Flash point 140° F.* *Immiscible with water.*	White	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed; glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed; glass (ICC–1D) not over 6½ gal. cap. Carboys in kegs; glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, boxed; glass, earthenware, clay or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. (ICC–17C) STC, not over 55 gal. cap. Benzyl chloride must be stabilized when packed in unlined containers. Steel drums, lead-lined (ICC–5H) not over 55 gal. cap. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Portable tanks (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations. Benzyl chloride must be stabilized when loaded in unlined tanks. Unstabilized benzyl chloride when anhydrous and free from impurities such as iron may be shipped in: Nickel drums (ICC–5K) not over 55 gal. cap.	Not permitted	Not permitted	Not permitted.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Boiler compound, liquid.	*Usually clear, colorless, odorless liquid.* *Generally contains caustic alkali in varying proportions.* *May be corrosive to wool textiles and some metals.* *May cause painful burns to the skin and tissue.* *Miscible with water.*	White	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) or not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17E, 17H) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Portable tanks: (ICC–60) not over 8,000 lb. gr. wt. Wooden barrels or kegs: (ICC–10A) asphalt lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12B), WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17E, 17H) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber lined (ICC–5D) not over 110 gal. cap. Metal drums, lead lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Portable tanks: (ICC–60) not over 8,000 lb. gr. wt. Wooden barrels or kegs: (ICC–10A) asphalt lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA) Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys, in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17E, 17H) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Portable tanks: (ICC–60) not over 8,000 lb. gr. wt. Wooden barrels or kegs: (ICC–10A) asphalt lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F), not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17E, 17H) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Portable tanks: (ICC–60) not over 8,000 lb. gr. wt. Wooden barrels or kegs: (ICC–10A) asphalt lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Caustic potash, liquid. Potassium hydroxide solution. Caustic soda, liquid. Sodium hydroxide solution.	*Odorless, corrosive liquids.* *Will attack flesh and destroy organic material.* Stow well away from other corrosive liquids (white label). Do not stow over cargo of an organic nature.	White.	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Portable tanks (ICC-60) not over 8,000 lb. gr. wt. marked "For Caustic Soda, Liquid, Only" or "For Caustic Potash, Liquid, Only." Tank cars complying with ICC regulations. In tank barges, see section covering barges in these regulations.	Stowage: "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass; (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Portable tanks (ICC-60) not over 8,000 lb. gr. wt. marked "For Caustic Soda, Liquid, Only" or "For Caustic Potash, Liquid, Only."	Ferry stowage (AA). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Portable tanks (ICC-60) not over 8,000 lb. gr. wt. marked "For Caustic Soda, Liquid, Only" or "For Caustic Potash, Liquid, Only." Motor truck vehicles having cargo tanks marked "For Caustic Soda, Liquid, Only", or "For Caustic Potash, Liquid, Only."	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys, in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums: (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Portable tanks (ICC-60) not over 8,000 lb. gr. wt. marked "For Caustic Soda, Liquid, Only" or "For Caustic Potash, Liquid, Only." Tank cars complying with ICC regulations. Motor truck vehicles having cargo tanks marked "For Caustic Soda, Liquid, Only", or "For Caustic Potash, Liquid, Only."

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Chromic acid solution	*A solution of chromic acid.* *Has a strong caustic effect upon the skin.* Observe containers carefully for signs of leakage and reject any which are found leaking. Do not stow with other acids (white label), inflammable liquids (red label), glycerin or any combustible material. Observe special requirements for stowage on board vessels also transporting explosives.	White	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass, (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums: (ICC-5A) not over 110 gal. cap. (ICC-5C) not over 110 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass, (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass. (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, ploy-ethylene (ICC-1F) not over 13 gal cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums: (ICC-5A) not over 110 gal. cap. (ICC-5C) not over 110 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA) Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, po.y-ethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (CC-2S) not over 15 gal. cap. Steel barrels or drums: (ICC-5A) not over 110 gal. cap. (ICC-5C) not over 110 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums: (ICC-5A) not over 110 gal. cap. (ICC-5C) not over 110 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Compounds, cleaning liquid. Compounds, iron or steel rust preventing or removing. Compounds, lacquer, paint or varnish removing liquid. Compounds, vulcanizing, liquid.	*Any compounds under these descriptive names that classify in accordance with the definitions given in these regulations as a corrosive liquid.*	White	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drum (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Corrosive liquid, N. O. S.	*Any liquid not otherwise specified by name in this chart which qualifies as a corrosive liquid according to the definition contained in these regulations.*	White	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal.cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr wt. (See Note in columns 5, 6, and 7.)	Not permitted	Ferry stowage (AA) Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5A) not over 110 gal. cap. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Metal barrels or drums: (ICC–17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.
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NOTE: Specification containers shall be of a design and constructed of materials that will not react dangerously with nor be decomposed by the chemical packed therein.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Cuprietylene-diamine solution.	*A dark purple liquid with odor resembling ammonia.* *Dissolves cellulose products such as cotton, wood, etc.* *Not very corrosive to most metals.* *In event of leakage drench with water.*	White	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums (ICC–5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums: (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. (ICC–17H, 37A, 37B) STC, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt. Portable tanks: (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Steel barrels or drums (ICC–5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums: (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. (ICC–17H, 37A, 37B) STC, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Steel barrels or drums (ICC–5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, rubber-lined (ICC–5H) not over 110 gal. cap. Metal drums: (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. (ICC–17H, 37A, 37B) STC, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Steel barrels or drums (ICC–5, 5A) not over 110 gal. cap., and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC–5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Metal drums: (ICC–17C, 17E, 17F,) STC, not over 55 gal. cap. (ICC–17H, 37A, 37B) STC, not over 5 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 6 5lb. gr. wt. Portable tanks: (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Drugs, chemicals, medicines, or cosmetics, N. O. S. When packed in accordance with ICC requirements for the particular substance and separated and cushioned by incombustible absorbent material when the characteristics of the substance so require. See §146.23-30 for limited quantity shipments.	*A unit substance or a compound classified as a corrosive liquid in accordance with the definition contained herein, when prepared, packed, and offered to the trade as drugs, chemicals, medicines or cosmetics.*	White	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal barrels or drums: (ICC-17H, 37A, 37B) STC, lined, not over 55 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 6 lb. gr. wt. (See note in column 5, 6, and 7.)	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal barrels or drums: (ICC-17H, 37A, 37B) STC, lined, not over 55 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal barrels or drums: (ICC-17H, 37A, 37B) STC, lined, not over 55 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal barrels or drums: (ICC-17H, 37A, 37B) STC, lined, not over 55 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A), asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.

NOTE: Specification containers shall be of a design and constructed of materials that will not react dangerously with nor be decomposed by the chemical packed therein.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Electrolyte (acid) or corrosive battery fluid. NOTE: Electrolyte (acid) must not be over 47% strength (39° Baumé).	*Electrolyte acid is a term commonly applied to dilute sulfuric acid used in electric storage batteries.* *This acid generates heat when mixed with water.* *Will char organic material.* *Miscible with water.* Do not stow with combustible materials. Observe closely for signs of leakage and reject packages which are leaking or show signs of having leaked.	White	Stowage: "On deck in open." "On deck under cover." "Tween decks." Outside containers: Carboys, boxed, (ICC-1A) glass only, not over 13 gal. cap. Carboys in kegs (ICC-1C) glass only, not over 13 gal. cap. Carboys, boxed, glass (ICC-1D, 1E) not over 6½ gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. For export shipment only: Carboys, glass, in plywood drums (ICC-1EX) not over 6½ gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Jugs in tubs (ICC-31) not over 2 gal. each and limited to 1 jug in each tub. Steel barrels or drums: (ICC-5H) lead-lined, not over 110 gal. cap. (ICC-5D) rubber-lined, not over 110 gal. cap. (ICC-6J) WIC ICC-2S poly ethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B, 12C) WIC, not over 65 lb. gr. wt. Plywood drums (ICC-22A, 22B) WIC of glass not over 1 gal. cap. Portable tanks, lined (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, (ICC-1A) glass only, not over 13 gal. cap. Carboys in kegs (ICC-1C) glass only, not over 13 gal. cap. Carboys, boxed, glass (ICC-1D, 1E) not over 6½ gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. For export shipment only: Carboys, glass, in plywood drums (ICC-1EX) not over 6½ gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Jugs in tubs (ICC-31) not over 2 gal. each and limited to 1 jug in each tub. Steel barrels or drums: (ICC-5H) lead-lined, not over 110 gal. cap. (ICC-5D) rubber-lined, not over 110 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Plywood drums (ICC-22A, 22B) WIC of glass not over 1 gal. cap.	Ferry stowage (AA). Outside containers: Carboys, boxed (ICC-1A) glass only, not over 13 gal. cap. Carboys in kegs (ICC-1C) glass only, not over 13 gal. cap. Carboys, boxed, glass (ICC-1D, 1E) not over 6½ gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. For export shipment only: Carboys, glass, in plywood drums (ICC-1EX) not over 6½ gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Jugs in tubs (ICC-31) not over 2 gal. each and limited to 1 jug in each tub. Steel barrels or drums: (ICC-5H) lead-lined, not over 110 gal. cap. (ICC-5D) rubber-lined, not over 110 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Plywood drums (ICC-22A, 22B) WIC of glass not over 1 gal. cap.	Ferry stowage (BB). Outside containers: Carboys, boxed, (ICC-1A) glass only, not over 13 gal. cap. Carboys in kegs (ICC-1C) glass only, not over 13 gal. cap. Carboys, boxed, glass (ICC-1D, 1E) not over 6½ gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. For export shipment only: Carboys, glass, in plywood drums (ICC-1EX) not over 6½ gal. cap. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Jugs in tubs (ICC-31) not over 2 gal. each and limited to 1 jug in each tub. Steel barrels or drums: (ICC-5H) lead-lined, not over 110 gal. cap. (ICC-5D) rubber-lined, not over 110 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B, 12C) WIC, not over 65 lb. gr. wt. Plywood drums (ICC-22A, 22B) WIC of glass not over 1 gal. cap. Portable tanks, lined (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Formic acid. Formic acid, solution.	*A colorless liquid with a pungent irritating odor.* *It is combustible and will give off vapors which may form explosive mixtures in air.* *In concentrated form it is dangerously caustic to the skin.* *Solidifies at 45° F.* *Miscible with water.*	White.	Stowage: "On deck in open." "On deck protected." "On deck under cover." "Tween decks." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. Steel barrels or drums: (ICC-5C, 5) not over 110 gal. cap. (ICC-17H) STC, with special bag-type liners, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. Metal drums (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) latex rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt. Portable tanks (ICC-60) not over 8,000 lb. gr. wt. marked "For Formic Acid Only." Tank cars complying with ICC regulations stenciled "For Formic Acid Only." For export shipment only: Carboys, glass, in plywood drums (ICC-1EX) not over 6½ gal. cap.	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. Steel barrels or drums: (ICC-5C, 5) not over 110 gal. cap. (ICC-17H) STC, with special bag-type liners, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. Metal drums (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) latex rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. Steel barrels or drums: (ICC-5C, 5) not over 110 gal. cap. (ICC-17H) STC, with special bag-type liners, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. Metal drums (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) latex rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Carboys, polyethylene, in wooden boxes, plywood boxes or drums or metal crates: (ICC-1F, 1G, 1H) not over 13 gal. cap. Steel barrels or drums: (ICC-5C, 5) not over 110 gal. cap. (ICC-17H) STC, with special bag-type liners, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. Metal drums (ICC-37P) NRC, not over 5 gal cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) latex rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B, WIC, not over 65 lb. gr. wt. Portable tanks (ICC-60) not over 8,000 lb. gr. wt. marked "For Formic Acid Only." Tank cars complying with ICC regulations stenciled "For Formic Acid Only." For export shipment only: Carboys, glass, in plywood drums (ICC-1EX) not over 6½ gal. cap.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Hexamethylene diamine solution.	*A colorless solution ... Miscible with water.*	White	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums: (ICC-17C, 17E, 17F) STC, not over 55 gal cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums: (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums: (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Steel barrels or drums (ICC-5, 5A) not over 110 gal. cap. and not over 1,760 lb. gr. wt. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Metal drums: (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B), WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Hydriodic acid	*A clear, colorless or pale yellow fuming liquid.* *Gives off fumes which are irritating in contact with mucous membrane and in sufficient quantities will be suffocating.* *It is corrosive but will not cause fire.* *Miscible with water.*	White	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC-1A) not over 13 gal. cap. Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC-1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Steel barrels or drums: (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC not over 65 lb. gr. wt.	Stowage: "On deck protected." Outside containers: Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Steel barrels or drums: (ICC-17C, 17E. 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (AA) Outside containers: Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Steel barrels or drums: (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, lead (ICC-1B) not over 13 gal. cap. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Carboys, lead, metal-jacketed (ICC-2S) not over 15 gal. cap. Steel barrels or drums (ICC-5A) not over 110 gal. cap. Steel barrels or drums (ICC-5C) not over 110 gal. cap. Steel barrels or drums: (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Monel drums (ICC-5M) not over 55 gal. cap. Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Metal drums, lead-lined (ICC-5H) not over 110 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12A, 12B) WIC, not over 65 lb. gr. wt.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Hydrobromic acid	*A corrosive, fuming liquid varying from colorless to slightly yellow.* *Gives off fumes which are irritating in contact with mucous membrane and in sufficient quantities will be suffocating.* *Is corrosive but will not cause fire.* *Miscible with water.* Shall not be accepted in metal drums.	White	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1A) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. For hydrobromic acid not over 49% strength: Carboys, polyethylene, in plywood drums (ICC–1F) not over 13 gal. cap. Fiberboard boxes (ICC–12A) WIC, not over 65 lb. gr. wt. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Metal drums (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Tank cars complying with ICC regulations. For hydrobromic acid greater than 49% strength but not over 63% strength: Carboys, polyethylene, in plywood drums (ICC–1F) not over 13 gal. cap.	Stowage: "On deck protected." Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. For hydrobromic acid not over 49% strength: Carboys, polyethylene, in plywood drums (ICC–1F) not over 13 gal. cap. Fiberboard boxes (ICC–12A) WIC, not over 65 lb. net wt. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Metal drums (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap.	Ferry stowage (AA) Outside containers: Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. For hydrobromic acid not over 49% strength: Carboys, polyethylene, in plywood drums (ICC–1F) not over 13 gal. cap. Fiberboard boxes (ICC–12A) WIC, not over 65 lb. net wt. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Metal drums (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. For hydrobromic acid not over 49% strength: Carboys, polyethylene, in plywood drums (ICC–1F) not over 13 gal. cap. Fiberboard boxes (ICC–12A) WIC, not over 65 lb. net wt. Wooden barrels or kegs (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Metal drums (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Tank cars complying with ICC regulations. For hydrobromic acid greater than 49% strength but not over 63% strength: Carboys, polyethylene, in plywood drums (ICC–1F) not over 13 gal. cap.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Hydrochloric (muriatic) acid. NOTE: For bulk shipments, see Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.	*A corrosive, fuming liquid, varying from colorless to yellow.* *Gives off fumes which are irritating in contact with mucous membrane and in sufficient quantities will be suffocating.* *Will damage or destroy many articles by contact but does not cause fire.* *Will dissolve tin, iron, and steel with evolution of hydrogen gas.* *Noninflammable.* *Miscible with water.* Shall not be accepted in unlined metal drums. Do not stow with sulfuric acid, nitric acid or chlorates. Do not stow over other cargo.	White	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass (ICC-1E) not over 6½ gal. cap. Carboys, polyethylene, wooden boxes, plywood drums or boxes, or metal crates (ICC-1F, 1G, 1H) not over 15 gal. cap. Steel barrels or drums: (ICC-5D) rubber-lined not over 110 gal. cap. (ICC-5B, 6J, 37A) WIC (ICC-2S) polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC-16A) WIC ICC-2T not over 200 lb. gr. wt. Portable tanks, rubber-lined (ICC-60) not over 8,000 lb. gr. wt. Authorized for hydrochloric acid mixtures and compounds, cleaning, liquid (containing not over 28% hydrochloric (muriatic)) acid: Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Authorized only for hydrochloric acid not over 44½% strength by weight: Tank cars complying with ICC regulations. For export shipment only: Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, not over 6 gal. cap. Carboys, glass, in plywood drums (ICC-1EX) STC, not over 6½ gal. cap. Authorized only for hydrochloric (muriatic) acid solution, inhibited, containing not to exceed 15% hydrochloric acid: Metal barrels or drums; (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Drums must be lined throughout with a pliable plastic material impervious to the solution. (See Note in columns 5, 6, and 7.)	Stowage: "On deck protected." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass (ICC-1E) not over 6½ gal. cap. Carboys, polyethylene, wooden boxes, plywood drums or boxes, or metal crates (ICC-1F, 1G, 1H) not over 15 gal. cap. Steel barrels or drums: (ICC-5D) rubber lined, not over 110 gal. cap. (ICC-5B, 6J, 37A) WIC (ICC-2S) polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC-16A) WIC ICC-2T not over 200 lb. gr. wt. Authorized for hydrochloric acid mixtures and compounds, cleaning, liquid (containing not over 28% hydrochloric (muriatic)) acid: Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. For export shipment only: Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, not over 6 gal. cap. Carboys, glass, in plywood drums (ICC-1EX) STC, not over 6½ gal. cap. Authorized only for hydrochloric (muriatic) acid solution, inhibited, containing not to exceed 15% hydrochloric acid: Metal barrels or drums; (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Drums must be lined throughout with a pliable plastic material impervious to the solution.	Ferry stowage (AA) Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass (ICC-1E) not over 6½ gal. cap. Carboys, polyethylene, wooden boxes, plywood drums or boxes, or metal crates (ICC-1F, 1G, 1H) not over 15 gal. cap. Steel barrels or drums: (ICC-5D) rubber-lined, not over 110 gal. cap. (ICC-5B, 6J, 37A) WIC (ICC-2S) polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC-16A) WIC ICC-2T not over 200 lb. gr. wt. Motor truck vehicles having cargo tanks. Authorized for hydrochloric acid mixtures and compounds, cleaning, liquid (containing not over 28% hydrochloric (muriatic)) acid: Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. For export shipment only: Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, not over 6 gal. cap. Carboys, glass, in plywood drums (ICC-1EX) STC, not over 6½ gal. cap. Authorized only for hydrochloric (muriatic) acid solution, inhibited, containing not to exceed 15% hydrochloric acid: Metal barrels or drums; (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Drums must be lined throughout with a pliable plastic material impervious to the solution.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC-1A) not over 13 gal. cap. Carboys, in kegs, glass, earthenware, clay or stone (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys, in plywood drums, glass (ICC-1E) not over 6½ gal. cap. Carboys, polyethylene, wooden boxes, plywood drums or boxes, or metal crates (ICC-1F, 1G, 1H) not over 15 gal. cap. Steel barrels or drums: (ICC-5D) rubber-lined, not over 110 gal. cap. (ICC-5B, 6J, 37A) WIC (ICC-2S) polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) rubber-lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC-16A) WIC ICC-2T not over 200 lb. gr. wt. Portable tanks, rubber-lined (ICC-60) not over 8,000 lb. gr. wt. Authorized for hydrochloric acid mixtures and compounds, cleaning, liquid (containing not over 28% hydrochloric (muriatic)) acid: Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Authorized only for hydrochloric acid not over 44½% strength by weight: Tank cars complying with ICC regulations. For export shipment only: Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, not over 6 gal. cap. Carboys, glass, in plywood drums (ICC-1EX) STC, not over 6½ gal. cap. Authorized only for hydrochloric (muriatic) acid solution, inhibited, containing not to exceed 15% hydrochloric acid: Metal barrels or drums; (ICC-17H, 37A, 37B) STC, not over 5 gal. cap. Drums must be lined throughout with a pliable plastic material impervious to the solution.
Hydrochloric acid mixtures. NOTE: When hydrochloric acid contains oils or solvents it must not be shipped in rubber-lined containers.	See "Hydrochloric acid"	White.				
Hydrochloric (muriatic) acid solution, inhibited.	See "Hydrochloric (muriatic) acid".	White.				
Compounds, cleaning, liquid (containing hydrochloric (muriatic) acid).	See "Hydrochloric (muriatic) acid." Hydrochloric acid of not over 20% strength, and other corrosive liquids containing not over 20% hydrochloric acid, in inside containers not more than 8 fluid ounces capacity each, packed and cushioned as specified by ICC regulations are exempt from specification packaging, marking other than name of contents, and labeling requirements.	White.				

NOTE: Hydrochloric acid of not over 20% strength by weight (13.25° Baumé) may also be accepted in: Wooden barrels or kegs (ICC-10A) asphalt lined not over 50 gal. cap.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Hydrofluoric acid	*A colorless, volatile, fuming corrosive, liquid with a pungent irritating, odor, used primarily for etching glass.* *Dissolves glass and certain metals.* *Produces painful burn when allowed to contact flesh.* *Gives off fumes which are irritating in contact with mucous membrane and caustic in their effects.* *Miscible with water.* Observe special requirements for stowage on board vessels also transporting explosives. Keep cool.	White	Stowage: "On deck protected." Outside containers: Hydrofluoric acid not over 70% strength: Steel barrels or drums (ICC-6J) WIC (ICC-2S polyethylene drum) not over 55 gal. cap. Carboys, polyethylene, in plywood boxes, drums or wooden boxes (ICC-1F, 1G) not over 13 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC-16A) WIC-ICC-2T, not over 200 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 1 lb. cap. each, not over 65 lb. gr. wt. Hydrofluoric acid not less than 60% or more than 80% strength: Steel barrels or drums (ICC-5A) not over 55 gal. cap. Hydrofluoric acid not over 65% strength: Rubber drums (ICC-43A) not over 30 gal. cap. Hydrofluoric acid not over 62% strength: Metal barrels or drums, lined (ICC-5D) not over 55 gal. cap. Hydrofluoric acid not over 80% strength: Tank cars complying with ICC regulations. Hydrofluoric acid solutions and concentrations of 60% up to 65%, when shipped in unlined steel containers or metal tank cars, must be inhibited so that the corrosive effect on steel must not be greater than that of hydrofluoric acid of 65% concentration.	Not permitted	Not permitted	Not permitted.
• • •	• • •	• • •	• • •	• •	• • •	• • •

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Hydrofluosilicic acid (must be packed in accordance with ICC requirements).	*A clear, colorless fuming liquid. It has a strong corrosive action on steel, lead, and glass. It is caustic to the skin and will inflict severe burns. Irritating to mucous membrane. Miscible with water.* Do not use paint in the vicinity of hydrofluosilicic acid.	White	Stowage: "On deck protected." Outside containers: Wooden barrels or kegs: (ICC-10A) lined with asphalt or other material of equal efficiency, resistant to hydrofluosilicic acid, not over 50 gal. cap. (ICC-11A, 11B) WIC of natural rubber or ceresine. Outside containers not over 200 lb. net wt. Wooden boxes, WIC of natural rubber or ceresine or other material of equal efficiency resistant to hydrofluosilicic acid (ICC-15A, 15B, 15C, 16A, 19A), not over 200 lb. gr. wt. Tank cars complying with ICC regulations. Hydrofluosilicic acid of not over 40% strength may also be accepted in: Steel barrels or drums, rubber-lined (ICC-5D), not over 55 gal. cap. Rubber drums (ICC-43A) not over 30 gal. cap. Hydrofluosilicic acid containing no free hydrofluoric acid or other ingredient which will attack glass may also be accepted in: Carboys, boxed, glass only (ICC-1A) not over 13 gal. cap. Carboys in kegs, glass only (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 7 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Authorized only for hydrofluosilicic acid not exceeding 32% strength: Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Carboys, in plywood drums, polyethylene (ICC-1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC-1G) not over 15 gal. cap. Metal drums (ICC-6J) WIC (ICC-28 polyethylene) not over 55 gal .cap. Metal drums (ICC-37P) NRC, not over 5 gal. cap.	Not permitted	Not permitted	Not permitted.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Sodium aluminate, liquid.	*Hazardous in contact with organic substances and textiles.* Sodium aluminate, liquid, in inside containers of not more than 8 fluid ounces capacity each packed and cushioned as specified by ICC regulations are exempt from specification packaging, marking other than name of contents, and labeling requirements.	White	Stowage: "On deck protected." "On deck under cover." "On deck in open." Outside containers: Carboys, glass, in boxes, kegs or plywood drums: (ICC-1A, 1B, 1C, 1E) not over 13 gal. cap. (ICC-1D) not over 6½ gal. cap. (ICC-1X) not over 6 gal. cap. for export. Carboys, lead, metal jacketed: (ICC-2S) not over 15 gal. cap Carboys, polyethylene in wooden boxes, plywood drums or boxes: (ICC-1F, 1G) not over 15 gal. cap. Metal barrels or drums: (ICC-5, 5A, 5C, 5M) not over 110 gal. cap. (ICC-5D) rubber lined, not over 110 gal. cap. (ICC-5H) lead lined, not over 110 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums: (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes: (ICC-12B) WIC, not over 65 lb. gr. wt. Portable tanks: (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck under cover." "On deck in open." Outside containers: Carboys, polyethylene in wooden boxes, plywood drums or boxes: (ICC-1F, 1G) not over 15 gal. cap. Metal barrels or drums: (ICC-5, 5A, 5C) not over 110 gal. cap. (ICC-5D) rubber lined, not over 110 gal. cap. (ICC-5H) lead lined, not over 110 gal. cap. (ICC-5M) monel, not over 55 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums: (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes: (ICC-12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, polyethylene in wooden boxes, plywood drums or boxes: (ICC-1F, 1G) not over 15 gal. cap. Metal barrels or drums: (ICC-5, 5A, 5C) not over 110 gal. cap. (ICC-5D) rubber lined, not over 110 gal. cap. (ICC-5H) lead lined, not over 110 gal. cap. (ICC-5M) monel, not over 55 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums: (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes: (ICC-12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, glass, in boxes, kegs or plywood drums: (ICC-1A, 1B, 1C, 1E) not over 13 gal. cap. (ICC-1D) not over 6½ gal. cap. (ICC-1X) not over 6 gal. cap. Carboys, lead, metal jacketed: (ICC-2S) not over 15 gal. cap. Carboys, polyethylene in wooden boxes, plywood drums or boxes: (ICC-1F, 1G) not over 15 gal. cap. Metal barrels or drums: (ICC-5, 5A, 5C, 5M) not over 110 gal. cap. (ICC-5D) rubber lined, not over 110 gal. cap. (ICC-5H) lead lined, not over 110 gal. cap. (ICC-17C, 17E, 17F) STC, not over 55 gal. cap. (ICC-17H, 37A, 37B) STC, lined, not over 5 gal. cap. (ICC-6J) WIC ICC-2S polyethylene, not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Rubber drums: (ICC-43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC-10A) asphalt lined, not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes: (ICC-12B) WIC, not over 65 lb. gr. wt. Portable tanks: (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Sodium chlorite solution (not exceeding 40% sodium chlorite).	*A colorless, odorless liquid.* *Oxidizing agent.* *Miscible with water.* *If allowed to dry in contact with organic material fire may result.* *In event of spillage flush with large quantities of water.* Observe containers carefully for signs of leakage, and reject any which are found leaking. Do not stow with organic materials, inflammable liquids (red label), or explosives.	White.	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, polyethyene in wooden boxes, plywood drums or boxes or metal crates: (ICC–1F, 1G, 1H) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Steel barrels or drums (ICC–5D) rubber-lined, not over 110 gal. cap. (ICC–5B, 6J, 37A) WIC (ICC 2S polyethylene) not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) rubber-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC–16A) WIC ICC–2T, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Portable tanks, rubber-lined (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations. For export shipment only: Carboys, glass, in plywood drums (ICC–1EX) STC, not over 6½ gal. cap.	Stowage: "On deck protected." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, polyethylene in wooden boxes, plywood drums or boxes or metal crates: (ICC–1F, 1G, 1H) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Steel barrels or drums (ICC–5D) rubber-lined, not over 110 gal. cap. (ICC–5B, 6J, 37A) WIC (ICC–2S polyethylene) not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) rubber-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC–16A) WIC ICC–2T, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. For export shipment only: Carboys, glass, in plywood drums (ICC–1EX) STC, not over 6½ gal.cap.	Ferry stowage (AA). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, polyethylene in wooden boxes, plywood drums or boxes or metal crates: (ICC–1F, 1G, 1H) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Steel barrels or drums (ICC–5D) rubber-lined, not over 110 gal. cap. (ICC–5B, 6J, 37A) WIC (ICC–2S polyethylene) not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) rubber-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC–16A) WIC ICC–2T, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Motor truck vehicles having cargo tanks. For export shipment only: Carboys, glass, in plywood drums (ICC–1EX) STC, not over 6½ gal. cap.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay, or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass (ICC–1E) not over 7 gal. cap. Carboys, polyethylene in wooden boxes, plywood drums or boxes or metal crates: (ICC–1F, 1G, 1H) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Steel barrels or drums (ICC–5D) rubber-lined, not over 110 gal. cap. (ICC–5B, 6J, 37A) WIC (ICC–2S polyethylene) not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) rubber-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Wooden box (ICC–16A) WIC ICC–2T, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Portable tanks, rubber-lined (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations. Motor truck vehicles having cargo tanks. For export shipment only: Carboys, glass, in plywood drums (ICC–1EX) STC, not over 6½ gal. cap.

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Sulfuric acid (oil of vitriol). NOTE: For bulk shipments, see subchapter I (Cargo and Miscellaneous Vessels) of this chapter.	*Strongly corrosive, dense, oily liquid; colorless to dark brown, depending on purity.* *Ordinary commercial (not pure) acid dissolves all metals, including platinum.* *Concentrated (65%) acid attacks most metals slowly.* *Dilute acid dissolves metals more rapidly, particularly if heated.* *Sulfuric acid rapidly disintegrates wood, textiles and organic materials in general and is extremely corrosive to flesh, producing serious and slow-healing wounds.* *Miscible with water in all proportions with evolution of heat.* Stow well away from organic materials. Observe containers for any signs of leakage and reject any which are found leaking. In event of spillage, flush with large quantities of water. Do not accept for transportation if packed in the same container with any other substance. Must not be transported on any vessel carrying Class A or Class B explosives. Observe special requirements for stowage on board vessels which are also transporting Class C explosives. Sulfuric acid solutions of not over 25% concentrations, in inside containers of not more than 8 fluid ounces capacity each, packed and cushioned as specified by ICC regulations are exempt from specification packaging, marking other than name of contents, and labelling requirements.	White	Stowage: "On deck protected." "On deck under cover." "Under deck" (Steel drums containing sulfuric acid only). Outside containers: For sulfuric acid of any concentration: Jugs in tubs (ICC-31) not over 2 gallons each and limited to 1 jug in each tub. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC—15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Carboys, boxed, glass, earthenware, clay or stone (ICC—1X) STC, for export only, not over 6 gal. cap. Plywood drums (ICC-22A, 22B) WIC of glass or earthenware, not over 1 gal. cap. Fiberboard boxes (ICC-12A) WIC, not over 65 lb. gr. wt. For sulfuric acid of concentrations of not less than 100% and not more than 115% (approximate): ("Under deck" stowage not permitted.) Metal barrels or drums (ICC-5C) not over 55 gal. cap. For sulfuric acid of concentrations not to exceed 100.5%: Carboys, boxed, (ICC-1A) not over 13 gal. cap. Carboys in kegs (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap: Carboys in plywood drums, glass, (ICC-1E) not over 6½ gal. cap. For sulfuric acid of concentration not to exceed 95% (approximately 1.835 specific gravity (66° Baumé)): Metal barrels or drums (ICC-5H) lead lined, not over 110 gal. cap. Metal drums (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Carboys, polyethylene, in wooden boxes, plywood drums or boxes or metal crates (ICC-1F, 1G, 1H) not over 13 gal. cap. Wooden box (ICC-16A) WIC ICC-2T, not over 200 lb. gr. wt.	Stowage: "On deck protected." Outside containers: For sulfuric acid of any concentration: Jugs in tubs (ICC-31) not over 2 gallons each and limited to 1 jug in each tub. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Plywood drums (ICC-22A, 22B) WIC of glass or earthenware, not over 1 gal. cap. Fiberboard boxes (ICC-12A) WIC, not over 65 lb. gr. wt. For sulfuric acid of concentrations not to exceed 100.5%: Carboys, boxed, (ICC-1A) not over 13 gal. cap. Carboys in kegs (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 6½ gal. cap.	Ferry stowage (AA). Outside containers: For sulfuric acid of any concentration: Jugs in tubs (ICC-31) not over 2 gallons each and limited to 1 jug in each tub. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Plywood drums (ICC-22A, 22B) WIC of glass or earthenware, not over 1 gal. cap. Fiberboard boxes (ICC-12A) WIC, not xver 65 lb. gr. wt. For sulfuric acid of concentrations not to exceed 100.5%: Carboys, boxed, (ICC-1A) not over 13 gal. cap. Carboys in kegs (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 6½ gal. cap. For sulfuric acid of concentration not to exceed 95% (approximately 1.835 specific gravity (66° Baumé)): Metal barrels or drums (ICC-5H) lead lined, not over 110 gal. cap. Metal drums (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Carboys, polyethylene, in wooden boxes, plywood drums or boxes, or metal crates (ICC-1F, 1G, 1H) not over 13 gal. cap. Wooden box (ICC-16A) WIC ICC-2T, not over 200 lb. gr. wt.	Ferry stowage (BB). Outside containers: For sulfuric acid of any concentration: Jugs in tubs (ICC-31) not over 2 gallons each and limited to 1 jug in each tub. Wooden barrels or kegs (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Carboys, boxed, glass, earthenware, clay or stone (ICC-1X) STC, for export only, not over 6 gal. cap. Plywood drums (ICC-22A, 22B) WIC of glass or earthenware, not over 1 gal. cap. Fiberboard boxes (ICC-12A) WIC, not over 65 lb. gr. wt. For sulfuric acid of concentrations not to exceed 100.5%: Carboys, boxed, (ICC-1A) not over 13 gal. cap. Carboys in kegs (ICC-1C) not over 13 gal. cap. Carboys, boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC-1E) not over 6½ gal. cap. For sulfuric acid of concentration not to exceed 95% (approximately 1.835 specific gravity (66° Baumé)): Metal barrels or drums (ICC-5H) lead lined, not over 110 gal. cap. Metal drums (ICC-6J) WIC ICC-2S, polyethylene, not over 55 gal. cap. Carboys, polyethylene, in wooden boxes, plywood drums or boxes, or metal crates (ICC-1F, 1G, 1H) not over 13 gal. cap. Wooden box (ICC-16A) WIC ICC-2T, not over 200 lb. gr. wt.
Sulfuric acid, fuming (oleum) (Nordhausen) (not permitted to be stowed "under deck").		White.				

Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Sulfuric acid (oil of vitriol)—Continued Sulfuric acid, fuming (oleum) (Nordhausen) (not permitted to be stowed "under deck")—Continued			Outside containers—Continued For sulfuric acid of concentrations 77.5% (approximately 1.7019 specific gravity (59.18° Baumé)) or greater concentrations with or without inhibitor, provided such acid has a corrosive effect on steel measured at 100° F. no greater than 66° Baumé commercial sulfuric acid: Steel barrels or drums: (ICC-5A) not over 55 gal. cap. (ICC-5C) stainless steel, Types 304, 316 or 347, authorized only for sulfuric acid of 93 percent or greater strength. (ICC-17F) STC, not over 55 gal. cap. For sulfuric acid concentrations not over 76%: Steel barrels or drums: (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. For sulfuric acid of concentrations 65.25% (approximately 1.559 specific gravity (52° Baumé)) or greater concentrations, provided the corrosive effect on steel measured at 100° is not greater than that of 52° Baumé commercial sulfuric acid: Portable tanks (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations. For sulfuric acid concentrations not to exceed 51% (approximately 1.408 specific gravity (42° Baumé)): Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Portable tank, rubber-lined (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.	Outside containers—Continued For sulfuric acid of concentrations 77.5% (approximately 1.7019 specific gravity (59.18° Baumé)) or greater concentrations with or without inhibitor, provided such acid has a corrosive effect on steel measured at 100° F. no greater than 66° Baumé commercial sulfuric acid: Steel barrels or drums: (ICC-5A) not over 55 gal. cap. (ICC-5C) stainless steel, Types 304, 316, or 347, authorized only for sulfuric acid of 93 percent or greater strength. For sulfuric acid concentrations not over 76%: Steel barrels or drums: (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. For sulfuric acid concentrations not to exceed 51% (approximately 1.408 specific gravity (42° Baumé)): Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap.	Outside containers—Continued For sulfuric acid of concentrations 77.5% (approximately 1.7019 specific gravity (59.18° Baumé)) or greater concentrations with or without inhibitor, provided such acid has a corrosive effect on steel measured at 100° F. no greater than 66° Baumé commercial sulfuric acid: Steel barrels or drums: (ICC-5A) not over 55 gal. cap. (ICC-5C) stainless steel, Types 304, 316 or 347, authorized only for sulfuric acid of 93 percent or greater strength. (ICC-17F) STC, not over 55 gal. cap. For sulfuric acid concentrations not over 76%: Steel barrels or drums: (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap.	Outside containers—Continued For sulfuric acid of concentrations 77.5% (approximately 1.7019 specific gravity (59.18° Baumé)) or greater concentrations with or without inhibitor, provided such acid has a corrosive effect on steel measured at 100° F. no greater than 66° Baumé commercial sulfuric acid: Steel barrels or drums: (ICC-5A) not over 55 gal. cap. (ICC-5C) stainless steel, Types 304, 316 or 347, authorized only for sulfuric acid of 93 percent or greater strength. (ICC-17F) STC, not over 55 gal. cap. For sulfuric acid concentrations not over 76%: Steel barrels or drums: (ICC-6J) WIC (ICC-2S polyethylene) not over 55 gal. cap. For sulfuric acid of concentrations 65.25% (approximately 1.559 specific gravity (52° Baumé)) or greater concentrations, provided the corrosive effect on steel measured at 100° is not greater than that of 52° Baumé commercial sulfuric acid: Portable tanks (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations. For sulfuric acid concentrations not to exceed 51% (approximately 1.408 specific gravity (42° Baumé)): Metal drums, rubber-lined (ICC-5D) not over 110 gal. cap. Portable tank, rubber-lined (ICC-60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.
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Table F—Classification: Corrosive liquids—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Water treatment compound, liquid.	*Usually a white syrupy liquid.* *May be alkaline and corrosive.* *May be corrosive to textiles and some metals.* *May cause painful burns to the skin and tissue.* *Soluble in water.*	White	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17H, 37A, 37B) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt. Portable tanks (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.	Stowage: "On deck protected." "On deck in open." "On deck under cover." Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17H, 37A, 37B) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B) WIC, not over 65 lb. gr. wt.	Ferry stowage (AA). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17H, 37A, 37B) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass, earthenware, clay or stone (ICC–1A) not over 13 gal. cap. Carboys, boxed, lead (ICC–1B) not over 13 gal. cap. Carboys in kegs, glass, earthenware, clay or stone (ICC–1C) not over 13 gal. cap. Carboys, boxed, glass (ICC–1D) not over 6½ gal. cap. Carboys in plywood drums, glass, (ICC–1E) not over 7 gal. cap. Carboys, in plywood drums, polyethylene (ICC–1F) not over 13 gal. cap. Carboys, boxed, polyethylene (ICC–1G) not over 15 gal. cap. Carboys, boxed, glass, earthenware, clay, or stone (ICC–1X) STC, for export only, not over 6 gal. cap. Carboys, lead, metal-jacketed (ICC–2S) not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A) not over 110 gal. cap. (ICC–5C) not over 110 gal. cap. (ICC–17H, 37A, 37B) STC, not over 55 gal. cap. (ICC–6J) WIC ICC–2S, polyethylene, not over 55 gal. cap. (ICC–37P) NRC, not over 5 gal. cap. Metal drums (ICC–17C, 17E, 17F) STC, not over 55 gal. cap. Metal drums, rubber-lined (ICC–5D) not over 110 gal. cap. Metal drums, lead-lined (ICC–5H) not over 110 gal. cap. Monel drums (ICC–5M) not over 55 gal. cap. Rubber drums (ICC–43A) not over 30 gal. cap. Wooden barrels or kegs: (ICC–10A) asphalt-lined, not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 200 lb. gr. wt. Fiberboard boxes (ICC–12A, 12B), WIC, not over 65 lb. gr. wt. Portable tanks (ICC–60) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING COMPRESSED GASES

1. Section 146.24–80 is amended by deleting the present text (revised requirements transferred to Subpart 98.20) and by inserting the following in lieu thereof:

§ 146.24–80 *Liquid chlorine in bulk.* (a) Liquid chlorine may be carried in bulk only in inspected and certificated steel tank barges or steel cargo barges. For applicable requirements, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

2. Section 146.24–85 is amended by deleting the present text (revised requirements transferred to § 98.25) and by inserting the following in lieu thereof:

§ 146.24–85 *Anhydrous ammonia in bulk.* (a) Anhydrous ammonia may be carried in bulk only in inspected and certificated cargo barges, tank barges, or cargo vessels. For applicable requirements, see Part 98 of Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

3. Section 146.24–100 *Table G—Classification: Compressed gases* is amended as follows:

§ 146.24–100 *Table G—Classification: Compressed gases*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
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Anhydrous ammonia. Ammonia, anhydrous. NOTE: For bulk shipments, see Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.	*Noninflammable gas.* *Toxic and suffocating even in small quantities (less than 1%). Pungent odor gives warning of dangerous quantities in air.* *Lighter than air.* *Weakly inflammable and explosive with about 16 to 27% in air, when involved in a fire at a temperature about 1,100° F.* *Pressure about 315 lb. per square inch at 150° F.*	Green gas.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.) Tank cars complying with ICC regulations. Tanks (ICC–106A500, 106A-500X). Tank motor vehicle complying with ICC motor carrier regulations. Authorized only for stowage: "On deck protected," or "On deck under cover." Portable tanks (ICC–51) not over 8,000 lb. gr. wt.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.)	Ferry stowage (AA). Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.) Tank motor vehicle complying with ICC motor carrier regulations.	Ferry stowage (BB). Containers: Cylinders. Tank cars complying with ICC regulations. Tanks (ICC–106A500, 106A500X). Tank motor vehicle complying with ICC motor carrier regulations. Portable tanks (ICC–51) not over 8,000 lb. gr. wt.
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Carbon dioxide. Carbon dioxide, liquefied.	*Noninflammable gas.* *Will cause suffocation if breathed in excessive quantities.* *Odorless.* *Heavier than air.* *Pressure usually about 2,280 lb. per square inch at 150° F.* Do not stow with cyanides.	Green gas.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.) Tank cars complying with ICC regulations. Tank motor vehicles complying with ICC motor carrier regulations. Authorized only for stowage: "On deck protected" or "On deck under cover." Special tank containers (approval required). Portable tanks (ICC–51) not over 8,000 lb. gr. wt.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.)	Ferry stowage (AA). Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.) Tank motor vehicles complying with ICC motor carrier regulations.	Ferry stowage (BB). Containers. Cylinders. Tank cars complying with ICC regulations. Tank motor vehicles complying with ICC motor carrier regulations. Portable tanks (ICC–51) not over 8,000 lb. gr. wt.
Carbon dioxide gas, liquefied (mining device).	*Carbon dioxide mining devices consist of a long, small diameter cylinder charged with carbon dioxide.* *In actual use heat is applied to the unit by means of a cartridge containing a low explosive.* Hazards same as for "Carbon dioxide".	Green gas				
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Table G—Classification: Compressed gases—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Chlorine NOTE: For bulk shipments, see Subchapter I (Cargo and Miscellaneous Vessels) of this chapter.	*Noninflammable gas* *Poisonous: pungent odor; gives warning of dangerous quantities in air.* *Even in small quantities has a choking, smothering effect and is very injurious to membranes and tissues.* *Much heavier than air.* *May cause combustion of acetylene, turpentine, and finely divided organic material.* *Pressure about 210 lb. per sq. in. at 130° F.*	Green gas	Stowage: "On deck in open." "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck away from heat." Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.) Tank cars complying with ICC regulations. Tanks (ICC–106A500, 106A-500X).	Not permitted except in an emergency involving life or health, and upon application made to the Commandant of the Coast Guard, limited shipments of chlorine may be made under such conditions as the said Commandant in his judgment may authorize.	Not permitted except in an emergency involving life or health, and upon application made to the Commandant of the Coast Guard, limited shipments of chlorine may be made under such conditions as the said Commandant in his judgment may authorize.	Not permitted except in an emergency involving life or health, and upon application made to the Commandant of the Coast Guard, limited shipments of chlorine may be made under such conditions as the said Commandant in his judgment may authorize.
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Methyl mercaptan	*Inflammable liquid or gas with a strong offensive odor.* *Boiling point 45.7° F* *Vapor pressure 24.5 lb. per sq. in. at 68° F.* *Heavier than air.*	Red gas	Stowage: "On deck protected." "On deck under cover." Containers: Cylinders: (With valve protection cap.) (With dished heads.) (Boxed.) Portable tanks (ICC–51) not over 8,000 lb. gr. wt. Tank cars complying with ICC regulations	Not permitted	Not permitted	Not permitted.
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(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING POISONOUS ARTICLES

1. Section 146.25–45 is amended by deleting paragraphs (e) and (f), as follows:

§ 146.25–45 *Limitation on all stowage.* * * *

(e) [Reserved.]

(f) [Reserved.]

2. Section 146.25–55 is amended by changing paragraph (a) to read as follows:

§ 146.25–55 *Exemptions for poisons, Class B.* (a) Poisonous liquids, Class B, as defined in this subpart except those enumerated in subparagraph (3) of this paragraph, packaged in tightly closed inside containers, securely cushioned to prevent breakage and packed as follows are exempt from specification packaging, marking other than name of contents, and labeling requirements:

(1) In glass or earthenware containers not over 1 quart capacity each, or in metal containers not over 1 gallon capacity each, packed in strong outside wooden boxes or barrels.

(2) In glass or earthenware containers not over 1 pint capacity each, or in metal containers not over 1 quart capacity each, packed in strong outside fiberboard boxes.

(3) The exemption provisions of this section do not apply to the following:

a. Aniline oil.

b. 4Chloro-o-toluidine hydrochloride.

c. Chlorpicrin and chlorpicrin mixtures containing no compressed gas or poisonous liquid, class A.

d. Hexaethyl tetraphosphate and hexaethyl tetraphosphate mixtures containing more than 25 percent hexaethyl tetraphosphate by weight.

e. Hydrocyanic acid solutions.

f. Methyl bromide.

g. Methyl bromide and chlorpicrin mixture, liquid.

h. Methyl parathion and methyl parathion mixtures containing more than 25 percent methyl parathion by weight.

i. Motor fuel anti-knock compound.

j. Parathion and parathion mixtures containing more than 25 percent parathion by weight.

k. Phenyldichlorarsine.

l. Tetraethyl dithio pyrophosphate and tetraethyl dithio pyrophosphate mixtures containing more than 25 percent tetraethyl dithio pyrophosphate by weight.

m. Tetraethyl lead.

n. Tetraethyl pyrophosphate and tetraethyl pyrophosphate mixtures containing more than 25 percent tetraethyl pyrophosphate by weight.

o. Thiophosgene.

3. Section 146.25–200 *Table H—Classification: Class B; less dangerous poisons* is amended as follows:

§ 146.25–200 *Table H—Classification: Class B; less dangerous poisons*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Acetone cyanhydrin	*A clear, colorless to pale yellow liquid.* *May decompose into acetone and hydrogen cyanide if not stabilized.* *Very soluble in water.* Protect from direct rays of the sun and all sources of artificial heat. Stow away from living quarters and food stuff.	Poison	Stowage: "On deck protected." "On deck under cover." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC–1A) glass, not over 13 gal. cap. (ICC–1D, 1E) glass, not over 7 gal. cap. (ICC–1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A, 5B, 5C) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37B) STC, not over 10 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC–37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars (complying with ICC regulations). Fiber drums: (ICC–21B) WIC, not over 200 lb. net wt.	Not permitted	Not permitted	Not permitted.

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Alcohol, allyl. Allyl alcohol.	*A clear, colorless liquid having an unpleasant, irritating odor somewhat resembling mustard oil.* *Violent effect on the eyes.* *Inflammable with a flashpoint about 70° F.* *Mixed in certain proportions with air, its vapors are explosive.* *Immiscible with water.* Protect from direct rays of the sun and all sources of artificial heat. Stow away from living quarters and food stuff.	Poison	Stowage: "On deck in open." "On deck under cover." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC–1A) glass, not over 13 gal. cap. (ICC–1D, 1E) glass, not over 7 gal. cap. (ICC–1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A, 5B, 5C) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37B) STC, not over 10 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC–37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC–42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC–12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Fiber drums: (ICC–21B) WIC, not over 200 lb. net wt.	Not permitted	Not permitted	Not permitted.
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Aldrin mixtures, liquid, with more than 60% aldrin. Aldrin mixtures, liquid, containing 60% or less of aldrin and no other material classed as dangerous in this part are not subject to the regulations of Subpart 146.25.	*Poisonous liquid mixtures* *May be absorbed through the skin, through digestive organs, or from vapor through respiratory organs.* Stow away from living quarters and foodstuffs.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.: authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap, and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for viscous mixtures or those which may become partially solid: Steel barrels or drums (ICC-6A, 6B, 6C) not over 55 gal. cap.	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.: authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net. wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Authorized only for viscous mixtures or those which may become partially solid: Steel barrels or drums (ICC-6A, 6B, 6C) not over 55 gal. cap.	Ferry stowage (AA) Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.: authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Authorized only for viscous mixtures or those which may become partially solid: Steel barrels or drums (ICC-6A, 6B, 6C) not over 55 gal. cap.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E, 17H) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.: authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Authorized only for viscous mixtures or those which may become partially solid: Steel barrels or drums (ICC-6A 6B, 6C) not over 55 gal. cap.
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Arsenic acid, liquid	*A concentrated, aqueous solution.* *Has considerable corrosive effect on iron and steel.* *Will contaminate foodstuffs.* *Miscible with water.* Stow away from living quarters. Do not stow with corrosive liquids (white label).	Poison	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, glass (ICC-1A) not over 13 gal. cap. Carboys in kegs, glass (ICC-1C) not over 15 gal. cap. Carboys boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in wooden boxes, plywood drums, or plywood boxes (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B) not over 110 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars (ICC-103, 103A, 103W, 103A-W).	Stowage: "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys, boxed, glass (ICC-1A) not over 13 gal. cap. Carboys in kegs, glass (ICC-1C) not over 15 gal. cap. Carboys boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in wooden boxes, plywood drums, or plywood boxes (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B) not over 110 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Carboys, boxed, glass (ICC-1A) not over 13 gal. cap. Carboys in kegs, glass (ICC-1C) not over 15 gal. cap. Carboys boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in wooden boxes, plywood drums, or plywood boxes (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B) not over 110 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys, boxed, glass (ICC-1A) not over 13 gal. cap. Carboys in kegs, glass (ICC-1C) not over 15 gal. cap. Carboys boxed, glass (ICC-1D) not over 6½ gal. cap. Carboys in wooden boxes, plywood drums, or plywood boxes (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B) not over 110 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars (ICC-103, 103A, 103W, 103A-W).

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Arsenic chloride (arsenous), liquid. Arsenic trichloride, liquid.	*Fuming colorless oily liquid.* *Caustic and corrosive.* *Do not breathe fumes.* *Will contaminate foodstuffs.* Stow away from living quarters. Do not stow with corrosive liquids (white label).	Poison	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 5 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt.	Stowage: "On deck under cover." "Tween decks readily accessible." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 5 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt.	Ferry stowage (AA). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 5 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 5 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt.
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Arsenical compounds or mixtures, N. O. S. liquid.	*These substances are in the form of liquids or liquid paste.* *Poisonous if taken internally.* *Will contaminate foodstuffs.* Stow away from living quarters and foodstuffs. Do not stow with acids (white label).	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." "Tween decks." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.
Arsenical dip, liquid (sheep dip).	*A liquid compound containing arsenic.* *Poisonous.* *Miscible with water.* Stow away from foodstuffs.	Poison.				
Arsenous and mercuric iodide solution, liquid.	*Solutions of arsenous iodide and mercuric iodide in water.* *Also known as "Donovan's solution."* *Poisonous if taken internally.* Stow away from foodstuffs and living quarters.	Poisen.				
Bordeaux arsenites, liquid.	*Poisonous when taken into the digestive canal as by contaminated food or in the form of vapors through respiratory organs.* Stow away from living quarters and foodstuffs.	Poison.				

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Carbolic acid (phenol) liquid. Phenol, liquid (liquid tar acid containing over 50% benzophenol).	*Dark, viscous liquid having a distinctive odor.* *Will attack and burn skin and flesh.* *Poisonous by absorption through the skin and through the digestive organs.* *Soluble in water.* Stow away from foodstuffs and living quarters.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A, 1C) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes, (ICC-15A, 15B, 15C, 16A, 19A), WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars (complying with ICC regulations).	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Steel barrels or drums: (ICC-5, 5A, 5B) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A, 1C) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37B) STC, not over 10 gal cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars (complying with ICC regulations).
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Compounds, tree or weed killing, liquid.	Stow away from living quarters and foodstuffs.	Poison	Stowage: "On deck protected." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC–1A) glass, not over 13 gal. cap. (ICC–1D, 1E) glass, not over 7 gal. cap. (ICC–1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A, 5B, 5C) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37B) STC, not over 10 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC–37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC–42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes: (ICC–12B) WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations. Fiber drums: (ICC–21B) WIC, not over 200 lb. net wt.	Stowage: "On deck protected." "On deck under cover." "Tween decks." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC–1A) glass, not over 13 gal. cap. (ICC–1D, 1E) glass, not over 7 gal. cap. (ICC–1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A, 5B, 5C) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37B) STC, not over 10 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC–37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC–42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes: (ICC–12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC–21B) WIC, not over 200 lb. net wt.	Ferry stowage (AA) Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC–1A) glass, not over 13 gal. cap. (ICC–1D, 1E) glass, not over 7 gal. cap. (ICC–1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A, 5B, 5C) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37B) STC, not over 10 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC–37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC–42B, 42C, 42D, 42E) not over 55 gal cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes: (ICC–12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC–21B) WIC, not over 200 lb. net wt.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC–1A) glass, not over 13 gal. cap. (ICC–1D, 1E) glass, not over 7 gal. cap. (ICC–1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC–5, 5A, 5B, 5C) not over 55 gal. cap. (ICC–17C, 17E) STC, not over 55 gal. cap. (ICC–37B) STC, not over 10 gal. cap. (ICC–37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC–37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC–42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 50 gal. cap. (ICC–11A, 11B) WIC, not over 200 lb. net wt. Wooden boxes: (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiberboard boxes: (ICC–12B) WIC, not over 65 lb. gr. wt. Tank cars complying with ICC regulations. Fiber drums: (ICC–21B) WIC, not over 200 lb. net wt.

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Dinitrobenzol, liquid	*Colorless to pale yellow liquid.* *Flashpoint variable depending on solvent, may be low.* *Slightly soluble in water.* Stow away from living quarters and foodstuffs.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." "Tween decks." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 150 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Drugs, chemicals, medicines or cosmetics, N. O. S. (liquid). See § 146.25-55 regarding "Exemptions for poisons, Class B" for limited quantity shipments.	*A unit substance or a compound classified as a less dangerous poison, Class B, in accordance with the definition contained herein, when prepared, packed and offered to the trade as drugs, chemicals, medicines or cosmetics.* Stow away from living quarters, and foodstuffs. Do not stow with acids (white label). Keep cool.	Poison	Stowage. "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Insecticide, liquid	*Generally contains more or less of some highly poisonous substance, often an arsenic compound.* *Do not breath air containing vapors of this substance.* *Do not allow in contact with the skin.* Stow away from living quarters and foodstuffs. Do not stow with acids (white label).	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Mercuric iodide, solution	*Colorless to yellow-colored liquid.* *Will contaminate foodstuffs.* Stow away from living quarters and foodstuffs.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Methyl bromide, liquid (*bromomethane*).	*Colorless, transparent, volatile liquid. Chloroform-like odor. Noninflammable* *Exists as gas under usual temperatures. Liquid form has boiling point of 40° F.* Stow away from living quarters and foodstuffs Do not stow with acids (white label). Keep cool.	Poison	Stowage: "On deck protected." "On deck under cover." Outside containers: Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) with inside metal cans containing not over 1 lb. each. Outside containers not over 100 lb. net wt. Fiberboard boxes (ICC-12B) with inside metal cans containing not over 1 lb. each. Outside containers not over 50 lb. net wt. Cylinders (ICC-3A225, 3AA225, 3B225, 3E1800, 4A225, 4B225, 4BA225). NOTE: Cylinders having a wall thickness of less than 0.08 in. must be packed in boxes or crates. Metal spheres (ICC-4D300, 4D500) in strong boxes or crates. Tank cars complying with ICC regulations. Authorized only for mixtures containing not over 40% by weight of methyl bromide: Metal barrels or drums: (ICC-17C) STC, not over 5 gal. cap.	Stowage: "On deck protected." "On deck under cover." Outside containers: Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) with inside metal cans containing not over 1 lb. each. Outside containers not over 100 lb. net wt. Fiberboard boxes (ICC-12B) with inside metal cans containing not over 1 lb. each. Outside containers not over 50 lb. net wt Cylinders (ICC-3A225, 3AA225, 3B225, 3E1800, 4A225, 4B225, 4BA225). NOTE: Cylinders having a wall thickness of less than 0.08 in. must be packed in boxes or crates. Metal spheres (ICC-4D300, 4D500) in strong boxes or crates. Authorized only for mixtures containing not over 40% by weight of methyl bromide: Metal barrels or drums: (ICC-17C) STC, not over 5 gal. cap.	Ferry stowage (AA). Outside containers: Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) with inside metal cans containing not over 1 lb. each. Outside containers not over 100 lb. net wt. Fiberboard boxes (ICC-12B) with inside metal cans containing not over 1 lb. each. Outside containers not over 50 lb. net wt. Cylinders (ICC-3A225, 3AA225, 3B225, 3E1800, 4A225, 4B225, 4BA225). NOTE: Cylinders having a wall thickness of less than 0.08 in. must be packed in boxes or crates. Metal spheres (ICC-4D300, 4D500) in strong boxes or crates. Authorized only for mixtures containing not over 40% by weight of methyl bromide: Metal barrels or drums: (ICC-17C) STC, not over 5 gal. cap.	Ferry stowage (BB). Outside containers: Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) with inside metal cans containing not over 1 lb. each. Outside containers not over 100 lb. net wt. Fiberboard boxes (ICC-12B) with inside metal cans containing not over 1 lb. each. Outside containers not over 50 lb. net wt. Cylinders (ICC-3A225, 3AA225, 3B225, 3E1800, 4A225, 4B225, 4BA225). NOTE: Cylinders having a wall thickness of less than 0.08 in. must be packed in boxes or crates. Metal spheres (ICC-4D300, 4D500) in strong boxes or crates. Tank cars complying with ICC regulations. Authorized only for mixtures containing not over 40% by weight of methyl bromide: Metal barrels or drums: (ICC-17C) STC, not over 5 gal. cap.
Methyl bromide and chlorpicrin mixtures, liquid.	See: Methyl bromide, liquid...	Poison.				
Methyl bromide and ethylene dibromide mixtures, liquid.	See: Methyl bromide, liquid...	Poison.				
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Nicotine hydrochloride	*White deliquescent crystals.* *Soluble in water.* Stow away from living quarters and foodstuffs.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A), glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37B) STC, not over 10 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.
Nicotine, liquid	*Water-white oily liquid turning dark brown or black with age.* *Volatile at ordinary temperature.* *Miscible with water.* Stow away from living quarters and foodstuffs.	Poison.				
Nicotine sulfate, liquid	*Colorless solution having odor resembling tobacco.* *Miscible with water.* Stow away from living quarters and foodstuffs.	Poison.				

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Nitrobenzol, liquid (*oil of mirbane*).	*A heavy, oily liquid, yellow or brownish color, having the odor of bitter almonds.* *Ignites at a temperature of about 200° F. Gives off inflammable vapor.* *Is in the form of bright yellow crystals below a temperature of about 48° F.* *The vapors given off by this liquid are poisonous when inhaled.* *Is a powerful narcotic poison when induced into the digestive organs.* *May also be poisonous by absorption into the skin.* *Will contaminate foodstuffs.* *Slightly soluble in water.* Stow away from living quarters and foodstuffs. Protect from direct rays of the sun and all sources of artificial heat. Keep cool.	Poison	Stowage: "On deck in open." "On deck under cover." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Nitrochlorbenzene, ortho, liquid.	*A heavy, oily, yellow liquid* *Immiscible with water.* Hazards and precautions similar to "Nitrobenzol" above.	Poison.				

Table H—Classification: Class B: less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Nitrochlorbenzene, meta or para, solid.	*Pale yellow crystalline mass.* *Dangerous if taken internally, or in the form of vapors through the respiratory organs.* *Do not breathe air laden with the dust of these substances.* *Do not allow excessive contact with the skin.* *Insoluble in water.* *Will contaminate foodstuffs.* Stow away from living quarters and foodstuffs.	Poison	Stowage: "On deck in open." "On deck under cover." "Under deck" Outside containers: Steel barrels or drums: (ICC–5, 5A, 5B, 6B, 6C) not over 1760 lb. gr. wt. (ICC–6A) not over 880 lb. gr. wt. (ICC–17H, 37A, 37B) STC, not over 375 lb. gr. wt. When material is fused solid 880 lb. gr. wt. authorized. (ICC–17E) STC, not over 55 gal. cap. Authorized for nitrochlorbenzene, meta or para, solid. Wooden barrels or kegs: (ICC–10A, 10B, 10C) not over 600 lb. net wt. (ICC–11A) not over 115 lb. net wt. For paranitraniline, solid only, not over 385 lb. gr. wt. Wooden boxes (ICC–15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. net wt. Wooden kits (ICC–18B) WPL, not over 30 lb. net wt. Fiberboard boxes (ICC–12B, 12C) WIC, not over 50 lb. net wt. Fiber drums: (ICC–21A) not over 225 lb. net wt. For nitrochlorbenzene para and paranitraniline, 400 lb. gr. wt. allowed. (ICC–21B) not over 200 lb. net wt. Plywood drums (ICC–22A) not over 115 lb. net wt. Tank cars complying with ICC regulations.	Not permitted	Not permitted	Not permitted.
Paranitraniline (paranitroaniline) solid.	*Yellow crystalline powder.* *Very slightly soluble in water.* Protect from direct rays of sun and any sources of artificial heat. Keep cool and dry.	Poison.				

Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Nitroxylol	*Colorless or yellow liquid or crystals, becoming reddish brown upon exposure.* Stow away from living quarters and foodstuffs. Protect from direct rays of sun and all sources of artificial heat. Keep cool.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.	Stowage: "On deck in open." "On deck under cover." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net. wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry Stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.
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Table H—Classification: Class B; less dangerous poisons—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Poisonous liquids, N.O.S.	*May be any liquid classifying as a Less Dangerous Poison, Class B, in accordance with the definitions contained in these regulations, provided such liquid is not otherwise specified by name in these regulations.* Stow away from living quarters and foodstuffs. Do not stow with acids (white label). Keep cool and well away from all sources of artificial heat.	Poison	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations. (See Note in columns 5, 6, and 7.)	Stowage: "On deck in open." "On deck under cover." Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (AA) Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene.	Ferry stowage (BB). Outside containers: Carboys in wooden boxes, plywood drums, or plywood boxes: (ICC-1A) glass, not over 13 gal. cap. (ICC-1D, 1E) glass, not over 7 gal. cap. (ICC-1F, 1G) polyethylene, not over 15 gal. cap. Steel barrels or drums: (ICC-5, 5A, 5B, 5C) not over 55 gal. cap. (ICC-17C, 17E) STC, not over 55 gal. cap., and not exceeding 880 lb. gr. wt. (ICC-37A, 37B) STC, not over 5 gal. cap.; authorized for pastes only. (ICC-37P) NRC, not over 5 gal. cap. Aluminum drums: (ICC-42B, 42C, 42D, 42E) not over 55 gal. cap. Wooden barrels or kegs: (ICC-10A, 10B, 10C) not over 50 gal. cap., and not exceeding 600 lb. net wt. (ICC-11A, 11B) WIC, not over 200 lb. gr. wt. Wooden boxes (ICC-15A, 15B, 15C, 16A, 19A) WIC, not over 100 lb. gr. wt. Fiberboard boxes (ICC-12B) WIC, not over 65 lb. gr. wt. Fiber drums: (ICC-21B) WIC, not over 200 lb. net wt. Cylinders as prescribed for any compressed gas except acetylene. Tank cars complying with ICC regulations.

NOTE: Poisonous liquids, N. O. S., must be packed in specification containrs of a design and constructed of materials that will not react dangerously with nor be decomposed by the chemical packed therein.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

4. Section 146.25–400 *Table H—Classification: Class D; radioactive materials* is amended to read as follows:

§ 146.25–400 *Table H—Classification: Class D; radioactive materials*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Radioactive materials groups I and II. Cesium 137. Cobalt 60. Gold 198. Iridium 192. Radioactive materials N. O. S.	Group I: Radioactive materials that emit gamma rays only or both gamma and electrically charged corpuscular rays. Group II: Radioactive materials that emit neutrons and either or both gamma and electrically charged corpuscular rays. Do not stow with explosives, flammable liquids, compressed flammable gases, corrosive liquids, or poisonous gases or liquids in cylinders, projectiles, or bombs, or with undeveloped films. Observe instructions and safety precautions as set forth in this subpart.	Radioactive materials group I or group II: Red.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC—15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.	Ferry stowage (AA). Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.	Ferry stowage (BB). Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.
Radioactive materials group III. Radioactive materials, N. O. S.	Group III: Radioactive materials that emit electrically charged corpuscular rays only, i. e., alpha or beta etc., or any other radioactive material that is so shielded that the gamma radiation at the surface of the package does not exceed 10 milliroentgens per 24 hours at any time during transportation. Do not stow with explosives, flammable liquids, compressed flammable gases, corrosive liquids, or poisonous gases or liquids, in cylinders, projectiles, or bombs, or with undeveloped films. Observe instructions and safety precautions as set forth in this subpart.	Radioactive materials, group III: Blue.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.	Ferry stowage (AA). Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart must be complied with.	Ferry stowage (BB). Outside containers: Authorized for not more than 2,700 millicuries: Wooden boxes: (ICC–15A, 15B, 19A, 19B) WIC. Fiberboard boxes: (ICC–12B) WIC. Fiber drums: (ICC–21A, 21B) WIC. Metal barrels or drums: (ICC–6A, 6B, 6C). (ICC–17C, 17H) STC. Authorized for not more than 300 curies: Metal encased, lead or uranium metal-shielded containers (ICC–55). Must be equipped with a seal. Other approved containers. Packaging and shielding requirements of this subpart Must be complied with.

Table H—Classification: Class D; radioactive materials—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Radioactive materials as described under § 146.25-25 (a) and (b).	Do not stow with explosives, flammable liquids, compressed flammable gases, corrosive liquids, or poisonous gases or liquids, in cylinders, projectiles or bombs. Observe instructions and safety precautions as set forth in this subpart.	No label required.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck." Outside containers: Strong outside containers with or without inside container, meeting the applicable requirements of § 146.25-25.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck." Outside containers: Strong outside containers with or without inside container, meeting the applicable requirements of § 146.25-25.	Ferry stowage (AA). Outside containers: Strong outside containers with or without inside container, meeting the applicable requirements of § 146.25-25.	Ferry stowage (BB). Outside containers. Strong outside containers with or without inside container, meeting the applicable requirements of § 146.25-25.
Radioactive materials as described under § 146.25-25 (c).	Do not stow with explosives, flammable liquids compressed flammable gases, corrosive liquids, or poisonous gases or liquids, in cylinders, projectiles, or bombs. Observe instructions and safety precautions as set forth in this subpart.	No label required.	Stowage: "On deck protected." "On deck under cover." "Tween decks readily accessible." "Under deck." Outside containers: Strong outside containers with or without inside container, meeting the applicable requirements of § 146.25-25.	Not permitted.	Not permitted.	Not permitted.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING HAZARDOUS ARTICLES

1. Section 146.27-100 *Table K—Classification: Hazardous articles* is amended as follows:

(a) Delete the following items and all wording pertaining thereto in columns 1, 2, 3, 4, 5, 6 and 7:

(i) Bone, chipped (*heat treated*).
(ii) Camphor (*Crude, refined or synthetic*).
(iii) Cork, granulated.
(iv) Cork, ground.
(v) Fish oils.
(vi) *Lead-type dross.*
(vii) Manganese dioxide.
(viii) Shellac, raw.
(ix) Stick lac.

2. Section 146.27–100 *Table K—Classification: Hazardous articles* is further amended as follows:

Table K—Classification: Hazardous articles

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Automobiles, motorcycles, tractors, or other self-propelled vehicles, *new or used, when offered for transportation without boxing or crating and containing gasoline, or other motor fuel within the fuel tank.*	*Motor vehicles when offered for transportation as cargo or "passenger's baggage" on inland or domestic voyages and driven on and off the vessel by a member of the crew or agent of the vessel: or when offered as in ferry service and driven on and/or off the vessel by the owner or operator of the vehicle.* Gasoline tanks must be drained before loading vehicles destined for ocean-going voyages. No marking required.	No label required.	Stowage: "On deck in open." "On deck protected." "On deck under cover." "Tween decks." "Under deck." (See Note in columns 5, 6, and 7.)	Stowage: "On deck in open" or "On deck protected", or if the vessel is provided with a compartment fitted with an overhead sprinkler system, inert gas or steam smothering system in any of the following locations such compartments may be utilized. "On deck under cover." "Tween decks." "Under deck."	Ferry stowage: In the vehicle gangways.	Ferry stowage: "On deck in open" or "On deck protected", or in the covered vehicle gangways on board car ferries having an overhead sprinkler system in such places.

NOTE 1: This does not include motor vehicles having on board dangerous articles as lading. For regulations governing transportation of such vehicles, see §§ 146.08–1 to 146.08–55, inclusive.

NOTE 2: Automobiles, motorcycles, tractors, or other self-propelled vehicles, new or used, with or without boxing or crating and containing no gasoline or other motor fuel within the motor or fuel tank may be accepted for transportation on any type vessel without restriction, provided no dangerous articles other than those enumerated below are packed within the crate or vehicle:

(a) Two one-pint metal containers of retouching enamel, either hermetically sealed or closed with a secure friction cap.

(b) One tire repair kit containing a tube of cement of not more than 4 fluid ounces capacity, completely enclosed in an outer metal or fiber board container.

(c) One charged electric storage battery in position within the battery holder, provided the terminals are disconnected and protected against short circuit, or if shipped outside the holder, then secured to prevent any movement of same. If a battery is packed within a boxed or crated vehicle, "This side up" marking shall be required on the outside of the shipping box or crate.

(d) Such brake fluid as is actually contained within the brake mechanism.

(e) Motor vehicles shipped by, for or to the Departments of the Army, Navy or Air Force may also contain one gallon of electrolyte (acid) or corrosive battery fluid in an approved inside container, tightly and securely closed, packed in a strong outside container and cushioned therein on all sides with incombustible material in sufficient quantity to completely absorb the fluid contents in event of breakage. The outside container must be so blocked, braced or stayed within the vehicle or crate that it cannot change position during transit.

NOTE: The person driving a motor vehicle on board a vessel shall observe the following rules:
(1) Drive the vehicle to the location indicated by the vessel's representative.
(2) Securely set the brakes of the vehicle to prevent movement.
(3) Shut off the motor and do not restart same until the vessel has completed its voyage and docked.
(4) Shut off all vehicle lights and do not relight same until the vessel has completed its voyage.
(5) Make no repairs or adjustments to the vehicle while on board the vessel.
(6) Observe any instructions given by the vessel's representative during drive-on or drive-off operations.
Smoking by any person within the vehicle, while on board the vessel, is prohibited.

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Table K—Classification: Hazardous articles—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Cotton batting. Cotton batting dross. Cotton wadding. Cotton seed hull fiber or shavings, pulp or in cut linters.	*A product of cotton used principally for upholstery. Very susceptible to fire from sparks and also subject to spontaneous heating and possible ignition when wet or in contact with animal or vegetable oil or grease.* Cotton batting, cotton batting dross and cotton wadding when packed in wooden, fiberboard or metal containers are not subject to the regulations in this part.	No label required.	Stowage: "Tween decks." "Under deck." Outside containers: Bales—which shall be covered with bagging on at least three-fourths of their surface including both ends of the bale. Wooden barrels or boxes. Burlap bags compressed reasonably tight. NOTE: Shall not be accepted for transportation unless securely baled or in tight containers. Reject wet or oil-stained bales. Observe same conditions of stowage with other dangerous articles as required for "Cotton."	Stowage: "Tween decks." "Under deck." Outside containers: Bales—which shall be covered with bagging on at least three-fourths of their surface including both ends of the bale. Wooden barrels or boxes. Burlap bags compressed reasonably tight.	Ferry stowage (AA). Outside containers: Bales—which shall be covered with bagging on at least three-fourths of their surface including both ends of the bale. Wooden barrels or boxes. Burlap bags compressed reasonably tight.	Ferry stowage (BB): Outside containers: Bales—which shall be covered with bagging on at least three-fourths of their surface including both ends of the bale. Wooden barrels or boxes. Burlap bags compressed reasonably tight.
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Exothermic ferrochrome. Exothermic ferromanganese. Exothermic silicon-chrome.	*Gray or brown colored, hard, brittle solid. Mechanical, coherent mixture of the two metals with small amounts of oxidizers and bonding agents.* *Produces no hazardous conditions in contact with water.* *When heated to temperatures of 668° F. (350° C.) will burn briskly at a bright red heat and is difficult to extinguish with water or steam smothering system.* Outside containers shall be marked "Exothermic ferrochrome", "Exothermic ferromanganese", or "Exothermic silicon-chrome", as the case may be.	No label required.	Stowage: "On deck protected." Outside containers: Steel barrels or drums or cans, not over 750 lb. net wt., with or without slatted crates.	Stowage: "On deck protected." Outside containers: Steel barrels or drums or cans, not over 750 lb. net wt., with or without slatted crates.	Ferry stowage (AA). Outside containers: Steel barrels or drums or cans, not over 750 lb. net wt., with or without slatted crates.	Ferry stowage (BB). Outside containers: Steel barrels or drums or cans, not over 750 lb. net wt., with or without slatted crates.
• • •	• • •	• • •	• • •	• • •	• • •	• • •

Table K—Classification: Hazardous articles—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Paper scrap Paper waste *(When dry, clean and free from oil.)*	*Scrap paper of all descriptions.* *The hazard of this type of cargo lies in its susceptibility to fire from open flame or sparks.* Do not stow in any compartment with corrosive liquids (white label) or oxidizing materials (yellow label). No marking required.	No label required.	Stowage: "On deck under cover." "Tween decks." "Under deck." Outside containers: Tight bales. Unbaled consignments shall not be accepted.	Stowage: "On deck under cover." "Tween decks." "Under deck." Outside containers: Tight bales. Unbaled consignments shall not be accepted.	Ferry stowage (AA) Outside containers: Tight bales. Unbaled consignments shall not be accepted.	Ferry stowage (BB). Outside containers: Tight bales. Unbaled consignments shall no be accepted.
Rosin (*Colophony*)	*Any of various solid or semisolid organic substances.* *Chiefly of vegetable origin.* *Rosin is a term applied to the hard resin, commonly amber colored, left after distilling off the volatile oil of turpentine.* *Insoluble in water.* *Readily combustible.* Outside containers shall be marked either "Resin" or "Hazardous article."	No label required.	Stowage: "On deck in open." "On deck protected." "On deck under cover." "Tween decks." "Under deck." Outside containers: Steel barrels or drums. Wooden barrels or kegs. Wooden boxes. Fiberboard boxes. Fiber drums. Burlap bags, paper lined, not over 100 lbs. net wt. (at least 7½ oz. burlap with waterproofed paper lining). Multiwall paper bags, 6 ply (not over 100 lbs. net wt.) 4 ply (not over 50 lbs. net wt.); CFC. Rule 40–4 ply paper bags (not over 100 lbs. net wt.)	Stowage: "On deck in open." "On deck protected." "On deck under cover." "Tween decks." "Under deck." Outside containers: Steel barrels or drums. Wooden barrels or kegs. Wooden boxes. Fiberboard boxes. Fiber drums. Burlap bags, paper lined, not over 100 lbs. net wt. (at least 7½ oz. burlap with waterproofed paper lining). Multiwall paper bags, 6 ply (not over 100 lbs. net wt.) 4 ply (not over 50 lbs. net wt.): CFC. Rule 40–4 ply paper bags (not over 100 lbs. net wt.)	Ferry stowage (AA) Outside containers: Steel barrels or drums. Wooden barrels or kegs. Wooden boxes. Fiberboard boxes. Fiber drums. Burlap bags, paper lined, not over 100 lbs. net wt. (at least 7½ oz. burlap with waterproofed paper lining). Multiwall paper bags, 6 ply (not over 100 lbs. net wt.) 4 ply (not over 50 lbs. net wt.): CFC. Rule 40–4 ply paper bags (not over 100 lbs. net wt.)	Ferry stowage (BB). Outside containers: Steel barrels or drums. Wooden barrels or kegs. Wooden boxes. Fiberboard boxes. Fiber drums. Burlap bags, paper lined, not over 100 lbs. net wt. (at least 7½ oz. burlap with waterproofed paper lining). Multiwall paper bags, 6 ply (not over 100 lbs. net wt.) 4 ply (not over 50 lbs. net wt.): CFC. Rule 40–4 ply paper bags (not over 100 lbs. net wt.)

Table K—Classification: Hazardous articles—Continued

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation: Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
Sulfur Flowers of sulfur. Sulfur flower. Brimstone.	*A mineral substance in the form of hard lumps or amorphous powder.* *Insoluble in water.* *Crude sulfur in bulk is dangerously inflammable and readily fusible by heat. Will ignite by friction. When burning gives off sulfur dioxide, a suffocating gas. Sulfur dust given off in loading crude sulfur in proper proportions with air forms an explosive mixture and may be ignited by static electricity, open flame or spark.* Do not stow sulfur with carbon, charcoal, lampblack, fats, oils, chlorates, phosphates, phosphorus, or other carriers of oxygen. In the presence of carbon, charcoal, lampblack, and other carbonaceous substances, fats and oils may produce spontaneous heating and ignition; while with chlorates, phosphates, phosphorus and other oxygen carriers it may produce explosive mixtures. Outside barrels, boxes or bags shall be marked with the shipping name of the product as shown herein or "Hazardous Article."	No label required.	Stowage: "On deck in open." "On deck under cover." "Tween decks." "Under deck." Outside containers: Tightsiftproof barrels and boxes. Siftproof multiwall paper bags. Siftproof paperlined burlap bags. Tight siftproof railroad freight cars. Bulk. (See Note in columns 5, 6, and 7).	Stowage: "On deck under cover." "Tween decks." Outside containers: Tight siftproof barrels and boxes. Siftproof multiwall paper bags. Siftproof paperlined burlap bags.	Ferry stowage (AA). Outside containers: Tight siftproof barrels and boxes. Siftproof multiwall paper bags. Siftproof paperlined burlap bags. Vehicles loaded with sulfur in bulk may be transported provided the loading shows no sign of sifting of the sulfur.	Ferry stowage (BB). Outside containers: Tight siftproof barrels and boxes. Siftproof multiwall paper bags. Siftproof paperlined burlap bags. Tight siftproof railroad freight cars. Vehicles loaded with sulfur in bulk may be transported provided the loading shows no sign of sifting of the sulfur.

NOTE: In the loading, handling and unloading of sulfur in bulk the following conditions shall be complied with:

(a) When sulfur in bulk is loaded in a deep hold with general cargo in the tween deck hold above the sulfur a dust proof wooden bulkhead enclosure shall be built in the hatchways from the over deck of the lower hold to the weather deck forming a tight enclosure to prevent sulfur dust entering the tween decks during loading.

(b) Holds shall be cleaned of all debris.

(c) Ceiling shall be made tight to prevent sulfur dust finding its way into the bilges; any chinking necessary in the way of tank tops or bilges shall be with non-combustible material.

(d) In order to minimize the movement of fine sulfur dust, cowl ventilators serving the hold into which sulfur is being loaded or discharged shall be blanked off to prevent circulation of air.

(e) "No Smoking" signs shall be conspicuously displayed, and the officer in charge shall ensure that they are observed.

(f) An oxygen breathing apparatus, or proper gas mask, shall be made readily available.

(g) A fire hose, preferably supplied with fresh water from a shore supply source, shall be available at each hatch through which sulfur is being worked.

(h) Upon completion of loading, the sulfur shall be leveled off and the sulfur dust deposited during the process of loading, being extremely inflammable, shall be cared for by sweeping or washing it down. This applies to the decks and to the overhead structure within the holds.

(j) After unloading, all residue of sulfur or sulfur dust shall be thoroughly cleaned out of cargo holds before loading other cargo therein.

(k) When sulfur is loaded by metal chute method, provision shall be made for proper grounding of the chute, using flexible cable to prevent static discharge.

(R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.)

SUBPART—DETAILED REGULATIONS GOVERNING THE TRANSPORTATION OF MILITARY EXPLOSIVES AND HAZARDOUS MUNITIONS ON BOARD VESSELS

1. The title for this subpart is amended to read as set forth above.

2. This subpart, consisting of §§ 146.29–1 to 146.29–100, inclusive, is amended to read as follows:

Sec.
146.29–1 Effective date.
146.29–3 Scope.
146.29–5 Regulations not applicable.
146.29–7 Port security regulations.
146.29–9 Import shipments.
146.29–11 Definitions and abbreviations.
146.29–13 Permit for handling military explosives.
146.29–15 Authority to load, handle or discharge; facilities and use.
146.29–17 Prohibited explosives.
146.29–19 Explosives loading supervisory detail.
146.29–21 Personnel identification.
146.29–23 Ship's officer present.
146.29–25 Fires and fire protection.
146.29–27 Fire hose.
146.29–29 Smoking.
146.29–31 Liquor or drugs.
146.29–33 Cargo working gear and equipment.
146.29–35 Lights, tools, and portable equipment.
146.29–37 Handling drafts of lumber.
146.29–39 Handling and slinging of explosives.
146.29–41 Weight per draft.
146.29–43 Requirement for the opening of hatches.
146.29–45 Loading or unloading military explosives and other cargo.
146.29–47 Packing and marking.
146.29–49 Stowage on board barges.
146.29–51 Stowage on board vessels.
146.29–53 Stowage of military explosives in hold containing coal.
146.29–55 Stowage of military explosives in holds containing household or personal effects and/or mail as cargo.
146.29–57 "On deck" stowage.
146.29–59 Stowage adjacent to other dangerous articles.
146.29–61 Stowage with nondangerous cargo in the same hold.
146.29–63 Stowage and dunnaging of ammunition and containers of explosives in bulk.
146.29–65 Damaged or leaking containers of explosives.
146.29–67 Defective ammunition.
146.29–69 Recoopering damaged packages.
146.29–71 Constructing magazines.
146.29–73 Preparation of magazines, decks, hatches and holds for handling military explosives.
146.29–75 Location of magazines and ammunition stowage.
146.29–77 Allocation of stowage.
146.29–79 Types of stowage.
146.29–81 Magazine Stowage A.
146.29–83 Ammunition stowage.
146.29–85 Chemical ammunition stowage.
146.29–87 Special stowage.
146.29–89 Portable magazine stowage.
146.29–91 Pyrotechnic stowage.
146.29–93 Stowage of blasting caps, detonators, primer detonators, etc.
146.29–95 Ventilation of magazine.
146.29–97 Statements of characteristic properties and hazards.
146.29–99 Explosives admixture charts.
146.29–100 Classification, handling and stowage chart.

AUTHORITY: §§ 146.29–1 to 146.29–100 issued under R. S. 4405, as amended, 4462, as amended, 4472, as amended; 46 U. S. C. 375, 416, 170. Interpret or apply sec. 3, 68 Stat. 675; 50 U. S. C. 198; E. O. 10402, 17 F. R. 9917, 3 CFR, 1952 Supp.

§ 146.29–1 *Effective date.* The regulations in this subpart will become effective on and after July 1, 1958.

§ 146.29–3 *Scope.* (a) The provisions of the regulations contained in this subpart apply to the transportation of military explosives, as cargo, on board all vessels that are subject to the regulations in this part. (See § 146.02–2.)

(b) Commercial shipments of explosives shall be tendered and transported in compliance with the applicable provisions of the regulations contained in the other subparts of this part.

(c) Where reference is made to other dangerous articles in this subpart, the regulations contained in §§ 146.02–1 to 146.27–100, inclusive, are applicable except as noted in § 146.29–5.

§ 146.29–5 *Regulations not applicable.* Sections 146.02–11, 146.02–21, 146.03–3, 146.06–9, 146.06–19, 146.09–1 to 146.09–6, inclusive, 146.10–6 (b), 146.20–15 to

146.20–51, inclusive, 146.20–85, 146.20–87, 146.20–90, 146.20–100 to 146.20–300, inclusive, 146.23–10 (d), 146.23–25 (a), (b) and (c); 146.24–55, the entries "Chemical ammunition containing Class 'A' poisons, liquids or gases," "chemical ammunition containing Class 'B' poisons, liquids or gases," and "chemical ammunition containing Class 'C' liquids, gases or solids" appearing in §§ 146.25–100, 146.25–200, and 146.25–300; 146.27–5 to 146.27–20, inclusive, and 146.27–100 are hereby declared inapplicable to the transportation of military explosives.

§ 146.29–7 *Port security regulations.* The applicable provisions of 33 CFR Parts 6, and 121 to 126, inclusive, shall, unless specifically authorized to the contrary by any provision of this subpart, be complied with by vessels, masters, agents, or charterers thereof and by all persons engaged in handling, loading, stowing or unloading explosives.

§ 146.29–9 *Import shipments.* Import shipments of military explosives shall be made in accordance with the provisions of the regulations in this subpart.

§ 146.29–11 *Definitions and abbreviations.* For the purpose of the regulations in this subpart, certain words, phrases, and abbreviations are defined as follows:

(a) *Military explosives.* Military explosives for the purpose of this subpart consist of all Interstate Commerce Commission's Classes A, B, and C explosives and hazardous munitions as defined below shipped by, for, or to the Departments of the Army, Navy, or Air Force of the United States or similar types of explosives shipped by, for, or to the government of any country whose defense is deemed vital to the defense of the United States. However, this definition shall not include those explosives shipped by, for, or to the Corps of Engineers, Department of the Army, for use in river and harbor works or other works under permits issued by that Agency, in which case the regulations in this part pertaining to commercial explosives shall apply. Military explosives are divided into three classes, as follows:

(1) *Ammunition.* Ammunition consists of all types of shells, projectiles, cartridges, grenades, bombs, mines, torpedoes, torpedo warheads, propellant powder charges, pyrotechnics, rockets, missiles, special weapons, chemical, smoke or incendiary ammunition, or other "made up" explosive devices that are utilized by the armed forces in the prosecution of a war.

(2) *Explosives in bulk.* Explosives in bulk consist of any high explosives, black powder, and low explosives or smokeless powder in accordance with the definitions in §§ 146.20–1, 146.20–7, and 146.20–9, when such substances are shipped in containers other than containers such as shells, bombs, grenades, mines, torpedoes, powder bags in individual containers, cartridges, fuzes, detonators, caps, primers, and similar "made up" ammunition devices.

(3) *Hazardous munitions.* Hazardous munitions for the purpose of these regulations are those dangerous articles used as oxidizers or fuels for missile propulsive systems. Such fuels and oxidizers as are listed in Tables XI–C and XI–D will be stowed and handled in accordance with these tables. For the purpose of these regulations these items shall be construed as "hazardous munitions" as defined above and not as "other dangerous articles" as noted in § 146.29–59.

(b) *Related terms.*—(1) *Complete round.* A complete round of "cannon ammunition", "artillery ammunition" or "gun ammunition" includes ammunition used in cannon or gun of caliber .75 in. and above. It includes complete round with components. The complete round comprises all of the components necessary to fire the cannon or gun once. These components are, in general, the projectile (fuzed or unfuzed), the propellent charge and the primer. Depending upon both the type of propellent charge and the method of loading of components into the cannon, complete rounds of "cannon ammunition", "artillery ammunition" or "gun ammunition" are described as fixed, semi-fixed or separate loading ammunition.

(2) *Fixed ammunition.* Fixed ammunition describes "cannon ammunition", "artillery ammunition" or "gun ammunition" of the type comprising a cartridge case with primer, a propellent charge and a projectile (fuzed or unfuzed) all of these components being assembled as a unit for one firing.

(3) *Semi-fixed ammunition (Army).* Complete rounds composed of a projectile (fuzed) and a cartridge case with a primer and propellent charge which is in a cloth bag or bags of small size. The base of the projectile fits free in the neck of the cartridge case and may be readily detached from the cartridge case. The round is loaded into the cannon with the projectile assembled to the cartridge case and is handled similarly to fixed ammunition in loading. It may be packed with the projectile disassembled from the cartridge case containing the propellent. The projectile is usually assembled loosely in the cartridge case and is packed in the same individual container.

(4) *Semi-fixed ammunition (Navy).* Semi-fixed ammunition is ammunition in which the primer and the propellent charge are firmly secured in the cartridge case with the projectile separate from the cartridge case. The propellent charge is loaded loosely in the cartridge case, differing in this respect from that of the Army which is loaded in a bag. The end of the cartridge case is sealed with a prepared plug or disc which is fired with the powder and is usually shipped stowed in a metal tank. The projectile is shipped separate. The U. S. Army may refer to this ammunition as separate loading ammunition.

(5) *Separate loading ammunition.* Complete rounds in which the separate components—projectile, propellent charge and primer—are loaded into the cannon or gun separately are known as "separate loading ammunition". Although the propellent charge may be in one section, it is usually divided into parts with each part assembled in a bag packed in outside shipping containers which may be of wood, fiber or metal.

(6) *Definitions of other dangerous articles.* For definitions of:

(i) Inflammable liquids, see § 146.21–1.

(ii) Inflammable solids and oxidizing materials, see § 146.22–1.

(iii) Corrosive liquids, see § 146.23–1.

(iv) Compressed gases, see § 146.24–1.

(v) Poisons, Class A, see § 146.25–5; Class B, see § 146.25–10; Class C, see § 146.25–15; Class D, see § 146.25–20.

(vi) Combustible liquids, see § 146.26–1.

(vii) Hazardous articles, see § 146.27–1.

(7) *Cargo hold.* A cargo hold is a space allotted entirely to the carriage of cargo and is bounded by permanent steel bulkheads, decks and the shell of the vessel; the deck openings being provided with means of effectively closing the hold against the weather, and in the case of superimposed holds, effectively closing off each hold.

(8) *Tween deck hold.* A tween deck hold is a space located between the weather deck and the lower hold.

(9) *Hatch.* An opening in the weather deck and all decks below in the same vertical plane through which cargo, etc., is passed. This term is also used in the regulations in this subpart to designate the entire series of holds served through one weather deck hatch.

(10) *Compartment.* A compartment is any space formed by permanent steel bulkheads and the ship's side and decks. The limits of a compartment are determined by the integrity of the bulkheads, shell or decks forming its boundaries. Access openings fitted with doors, hatch covers (steel or wood) or bolted plates are accepted as preserving the integrity of deck, bulkhead or shell.

(11) *Shelter deck space.* A shelter deck space is a space available for cargo situated above the uppermost complete continuous deck (main deck) and the deck next above. Normally this space contains no permanent watertight transverse bulkheads except at its forward and aft extremities.

(12) *Adjacent hold; hold adjacent.* Any hold which has as one of its boundaries a permanent steel bulkhead that is common, either partially or in its entirety, to another hold shall be termed "adjacent hold" or "hold adjacent" to the focal hold. This shall not be construed as meaning a hold above or a hold below said hold nor shall it include a hold that is situated diagonally from said hold and has only a corner as a common boundary.

(13) *The hold above.* "The hold above" shall be a hold immediately above another hold having its deck, either partially or in its entirety, common to the overhead of the hold below.

(14) *Any hold above.* "Any hold above" shall mean any hold that is partially or entirely in the same vertical plane over another hold even though there may be a hold or holds intervening.

(15) *The hold below.* "The hold below" shall be a hold immediately below another hold having its overhead, either partially or in its entirety, common to the deck of the hold above.

(16) *Any hold below.* "Any hold below" shall mean any hold that is partially or entirely in the same vertical plane under another hold even though there may be a hold or holds intervening.

(17) *Cargo net.* A cargo net is a net made of fiber or wire rope and used as a means of handling loose or package cargo to and from the hold of a vessel.

(18) *Tray.* A tray is any flat group of boards securely fastened to bearers in order to provide a level surface for the loading of cargo. Trays are given various names, those applied in some ports differing from those in other ports, according to (i) shape, (ii) method of securing to cargo handling gear, or (iii) use or lack of sideboards in conjunction with the tray.

(19) *Skipboard.* A skipboard is the term generally applied to a rectangular or square tray without sideboards.

(20) *Pieplate.* A pieplate is the term generally applied to a round, oval or hexagonal tray without sideboards.

(21) *Pallet.* A pallet is a tray so designed as to be picked up by a fork truck or similar cargo handling equipment. Pallets are not usually equipped with sideboards.

(22) *Palletized unit.* Individual packages or unpackaged items stowed in a compact mass upon a pallet or skids and banded together and to the pallet or skids by metal straps to form a unit consisting of pallet and packages.

(23) *Dunnage.* Lumber of not less than 1-inch commercial thickness laid over tank tops, decks or against bulkheads, frames, plating, ladders, etc., or used for filling up voids, or fitted around the cargo for the purpose of preventing damage during transportation.

(24) *Type "A" dunnage floor.* A type "A" dunnage floor shall be constructed of two layers of commercial 1-inch dunnage of widths not less than 4 inches fitted as close as possible, edge to edge, and butt to butt, the top course being laid crosswise to the lower course, or of a single layer of 2-inch lumber of widths not less than 6 inches fitted as close as possible edge to edge, and butt to butt.

(25) *Type "B" dunnage floor.* A type "B" dunnage floor shall be constructed of one layer of commercial 1-inch thick dunnage of widths not less than 4 inches fitted as close as possible, edge to edge, and butt to butt.

(26) *Partition bulkhead.* A partition bulkhead is a temporary bulkhead constructed of commercial 1-inch lumber of widths not less than 4 inches, secured alternately on both sides of the uprights and spaced not more than 6 inches apart. The uprights are at least 2" x 4" size, spaced not more than 30 inches apart.

(27) *Division bulkhead.* (i) When part of a compartment or hold is utilized for the stowage of military explosives, the remaining portion of such compartment or hold may be utilized for the stowage of general cargo provided a temporary wooden bulkhead is constructed in the compartment or hold to completely divide and protect the stowage of military explosives from the general cargo. The scantlings and construction of such bulkheads shall be as follows: For tween deck compartments or holds construction shall be of commercial 2-inch boarding, secured on 4" x 6" uprights spaced not to exceed 30 inches center to center. For lower holds construction shall be of commercial 2-inch boarding secured on 6" x 6" uprights, spaced not more than 24 inches center to center. Random widths of boarding may be used. The boarding shall be close fitted edge to edge and butt to butt to form a smooth surface facing the explosive stowage. Nails shall not protrude beyond the surface of the boarding.

(ii) See § 146.29–81 (e) for construction of a partition bulkhead within a Class "A" magazine measuring more than 40 feet in any direction.

(iii) When general cargo is to be stowed adjacent to the exterior of the Class "A" magazine see § 146.29–61 (b).

(28) *Shoring.* Shoring is a method of securing cargo against movement sidewise or downward. In this subpart it describes the use of timbers fitted vertically or at an angle to the side of the stowage. It may also describe the use of timber to support a stowage from moving downward.

(29) *Tomming.* Tomming is a method of securing cargo against displacement of movement upwardly.

(30) *Tween deck height.* (i) For the purpose of load calculations the height of a tween deck is ascertained by measuring the distance from the heel of the overhead deck beam to the heel of the underdeck beam. (The thickness of the plating forming the deck is not deducted from the height.)

(ii) For height of a tween-deck affected by the sheer of a deck measure as above at both the forward and after ends of the hold and divide the sum of these heights by two.

(31) *Permitted explosives.* Permitted explosives as used in § 146.29–100 shall mean explosives that have compatibility in accordance with the admixture charts in § 146.29–99.

(32) *Overstow.* The term "overstow" as used in these regulations shall mean to stow directly over.

(33) *Detonating fuzes.* (i) Detonating fuzes, Class A are used in the military service to detonate the high explosive bursting charges of projectiles, mines, bombs, torpedoes, and grenades. In addition to a powerful detonator, they may contain several ounces of a high explosive, such as tetryl or dry nitrocellulose, all asembled in a heavy steel envelope. They may also contain a small amount of radioactive component.

(ii) Detonating fuzes, Class C are those that are so made and packed that they will not cause functioning of other fuzes, explosives, or explosive devices in the same or adjacent containers.

(34) *Ammunition for cannon.* Ammunition for cannon is fixed, semi-fixed or separate loading ammunition which is fired from a cannon, mortar, gun, howitzer or recoilless rifle.

(35) *Ammunition for cannon with projectiles.* Ammunition for cannon with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles, or shell is fixed ammunition assembled in a unit consisting of the cartridge case containing the propelling charge and primer, and the projectiles, or shell, fuzed or unfuzed.

(36) *Ammunition for cannon with empty projectiles, inert-loaded projectiles, solid projectiles or without projectiles, or shell, and catapult charges exceeding 2 inches in diameter.* Ammunition for cannon with empty projectiles, inert-loaded projectiles, solid projectiles or without projectiles, or shell, and catapult charges exceeding 2 inches in diameter, is fixed ammunition assembled in a unit consisting of the cartridge case containing the propelling charge and primer with empty, inert-loaded, or solid projectiles, or without projectiles, which is fired from a cannon, mortar, gun, howitzer or recoilless rifle.

(37) *Explosive projectiles.* Explosive projectiles are shells, projectiles, guided missiles with war heads, war heads, or rocket heads, loaded with explosives or bursting charges, with or without other materials, for use in cannons, guns, tubes, mortars or other firing or launching devices.

(38) *Grenades.* Grenades, hand or rifle, are small metal or other containers designed to be thrown by hand or projected from a rifle. They are filled with an explosive or a liquid, gas or solid material such as a toxic or tear gas or an incendiary or smoke producing material and a bursting charge.

(39) *Explosive bombs.* Explosive bombs are metal or other containers filled with explosives. They are used in warfare and include aeroplane bombs and depth bombs.

(40) *Explosive mines.* Explosive mines are metal containers filled with a high explosive.

(41) *Explosive torpedoes.* Explosive torpedoes, such as are used in warfare, are metal devices containing a means of propulsion and a quantity of high explosives.

(42) *Rocket ammunition.* Rocket ammunition is fixed ammunition which is fired from a tube, launcher, rails, trough, or other device as distinguished from cannon ammunition which is fired from a cannon, gun, or mortar.

(43) *Ammunition for small arms with explosive bullets or explosive projectiles.* Ammunition for small arms with explosive bullets or ammunition for small arms with explosive projectiles is fixed ammunition to be used in machine guns or similar fire arms and consists of a metallic cartridge case, the primer and the propelling charge, with explosive bullet or explosive projectile with or without detonating fuze, the component parts necessary for one firing being all in one assembly.

(44) *Small-arms ammunition.* Small-arms ammunition is fixed ammunition consisting of a metallic composition or paper cartridge case, a primer, and a propelling charge, with or without bullet, shot, tear gas material, tracer components, or incendiary compositions or mixtures, but not including bullets loaded with high explosives, and is further limited to the following:

(i) Ammunition designed to be fired from a pistol, revolver, rifle, or shotgun held by the hand or to the shoulder.

(ii) Ammunition of caliber less than .75 designed to be fired from machine guns.

(iii) Blank cartridges including canopy remover cartridges, starter car-

tridges, and seat ejector cartridges, contaitning not more than 250 grains of propellant powder.

(45) *Chemical ammunition.* Chemical ammunition used in warfare is all kinds of explosive chemical projectiles, shells, bombs, grenades, etc., loaded with toxic, tear, or other gas, smoke or incendiary agent, also such miscellaneous apparatus as cloud-gas cylinders, smoke generators, etc., that may be utilized to project chemicals.

(46) *Boosters, bursters and supplementary charges.* Boosters and supplementary charges consist of a casing containing a high explosive and are used to increase the intensity of explosion of the detonator of a detonating fuze. Bursters consist of a casing containing a high explosive and are used to rupture a projectile or bomb to permit release of its contents.

(47) *Jet thrust units (jato), explosive (Class A), or igniters jet thrust (jato), explosive (Class A).* Jet thrust units (jato), explosive (Class A), are metal cylinders containing a mixture of chemicals capable of burning rapidly and producing considerable pressure. Under certain conditions the chemical fuel with which the unit is loaded may explode. Jet thrust units are designed to be ignited by an electric igniter. They are used to assist aeroplanes to take off, to propel large missiles and to drive moving targets for practice firing. Igniters, jet thrust (jato), explosive (Class A), are devices consisting of an electrically operated or remotely controlled igniting element and a fast-burning composition assembled in a unit for use in igniting the propelling charge of jet thrust units. Under certain conditions the burning composition may explode.

(48) *Propellant explosives, Class A.* Propellant explosives, Class A, are solid chemicals or solid chemical mixtures which are designed to function by rapid combustion of successive layers, generally with little or no smoke. The combustion is controlled by composition, size, and form of grain. Propellant explosives, Class A, include some types of smokeless powder and some types of solid propellant explosives for jet thrust units, rockets, or other devices. Any propellant explosive is Class A which detonates in any one out of five trials when tested in the packages in which it is offered for transportation. In conducting the test, one propellant contained shall be surrounded by inert loaded containers of the same weight, including one inert container placed on top of the propellant container. The propellant shall be ignited by means of a commercial electric squib placed within 4 inches of the bottom of the container. The presence of a crater and absence of flame shall be considered as evidences of detonation.

(49) *Propellant explosives, Class B.* Propellant explosives, Class B, are solid chemicals or solid chemical mixtures which function by rapid combustion of successive layers, generally with little or no smoke. The combustion is controlled by composition, size, and form of grain. Any propellant explosive is Class B which fails to detonate in five trials when tested in the packages in which it is offered for shipment. (See (48) for test.) Propellant explosives, Class B, include smokeless powder for small arms, smokeless powder for cannon, smokeless powder or solid propellant explosives for rockets, jet thrust units, or other devices. Black powder is not included in this classification.

(50) *Jet thrust units (jato), Class B.* Jet thrust units (jato), Class B are metal cylinders containing a mixture of chemicals capable of burning rapidly and producing considerable pressure. Jet thrust units are designed to be ignited by an electric igniter. They are used to assist aeroplanes to take off, to propel large missiles, and to drive moving targets for practice firing.

(i) Igniters, jet thrust (jato), Class B, are devices consisting of an electrically operated or remotely controlled igniting element and a fast-burning composition assembled in a unit for use in igniting the propelling charge of jet thrust units.

(ii) Starter cartridges, jet engine, consist of plastic and/or rubber cases, each containing a pressed cylindrical block of propellant explosive and having in the top of the case a small plastic compartment that encloses an electric squib, small amounts of black powder, and smokeless powder, which constitute an igniter. The starter cartridge is used to activate a mechanical starter for jet engines.

(51) *Special fireworks.* Special fireworks are manufactured articles designed primarily for the purpose of producing visible or audible pyrotechnic effects by combustion or explosion. Examples are toy torpedoes, railway torpedoes, some firecrackers and salutes, exhibition display pieces, aeroplane flares, illuminating projectiles, incendiary projectiles or incendiary bombs and smoke projectiles or smoke bombs fuzed or unfuzed and containing expelling charges but without bursting charges, hand or rifle grenades with ignition elements but not containing bursting charges, flash powders in inner units not exceeding 2 ounces each, flash sheets in interior packages, flash powder or spreader cartridges containing not over 72 grains of flash powder each and flash cartridges consisting of a paper cartridge shell, small-arms primer, and flash composition, not exceeding 180 grains all assembled in one piece. Fireworks must be in a finished state, exclusive of mere ornamentation, as supplied to the retail trade and must be so constructed and packed that loose pyrotechnic composition will not be present in packages in transportation.

(52) *Percussion fuzes, combination fuzes, and time fuzes.* Percussion fuzes, combination fuzes, and time fuzes are devices designed to ignite powder charges of ammunition or to initiate an intermediate charge (booster) in projectiles, bombs, etc. When such fuzes are assembled with booster charges they are properly described as "detonating fuzes".

(53) *Tracer fuzes and tracers.* Tracer fuzes and tracers are devices which are attached to projectiles and contain a slow-burning composition to show the flight of projectiles at night.

(54) *Cartridge bags, empty, with black powder igniters.* Cartridge bags, empty, with black powder igniters consist of empty bags having attached thereto an igniter composed of black powder.

(55) *Igniters.* Igniters consist of fiberboard, plastic, paper or metal tubes containing a small quantity of igniting compound which is ignited by the action of a primer, pull wire or scratch composition.

(56) *Primers.* Primers are devices used to ignite the powder charges of ammunition or the black powder bursting charges of projectiles. For small-arms ammunition the primers are "small-arms primers" or "percussion caps".

(57) *On deck.* "On deck" means that that article may be stowed on the open weather deck of the vessel.

(c) *Abbreviations.*

AA	Antiaircraft.
AAC	Antiaircraft common.
AACom	Antiaircraft common.
AC	Aircraft cannon.
AC	Hydrocyanic acid.
A. C. E. I. S.	Aircraft emergency identification signals.
A. D. F.	Auxiliary detonating fuze.
AIC	Ammunition identification code (Army).
ALN	Ammunition lot number.
Amm	Ammunition.
Ammo	Ammunition.
AP	Armor-piercing.
APC	Armor-piercing capped.
APT	Armor-piercing tracer.
ASSEM	Assembled.
AT	Anti-tank.
Aux	Auxiliary.
Aux Det	Auxiliary detonating fuze.
BBC	Brombenzylcyanide (tear gas).
BC	Bursting charge.
BD	Base detonating.
BDF	Base detonating fuze.
BL and P	Blind loaded and plugged.
BL and T	Blind loaded and tracer.
BP	Black powder.
BUORD	Bureau of Ordnance.
BUR CHG	Bursting charge.
CAL	Caliber.
CCIP	Case combination ignition primer.
CHG	Charge.
CG	Phosgene.
CK	Cyanogen chloride.
CL	Chlorine.
Cml-C	Chemical Corps.
CNS	Chloracetophenone solution (tear gas).
COM	Common.
Comp A	RDX-War Explosive.
Comp B	RDX-TNT Explosive.
Comp C	Plastic type RDX explosive.
Cor. L.	Corrosive Liquid.
CPI	Case percussion igniter.
CPP	Case precussion primer.
CT-TNT	Case TNT.
D	Explosive "D" (ammonium picrate).
DA	Diphenylchlor arsine.
DC	Depth charge.
DDR	Dummy drill.
DEMO	Demolition.
DM	Adamsite (sneeze gas).
DNT	Dinitrotoluene.
DP	Diphosgene.
EX	Experimental.
EXP	Expellant or explosive.
EXP "D"	Explosive "D".
F	Fuze.
FC	Full charge.
FFAR	Folding fin aircraft rocket.
FFFG	Fine fine fine grain (black powder).

FFG ——— Fine fine grain (black powder).
FG ——— Fine grain (black powder).
F. G. ——— Flammable compressed gas.
F. L. ——— Flammable liquid.
FNH ——— Flashless, nonhygroscopic.
FP ——— Flashless pellets.
FRAG ——— Fragmentation.
FM ——— FM smoke mix (titanium tetrachloride).
FS ——— FS smoke mix (sulfur trioxide).
F. S. ——— Flammable solid.
GB ——— Isopropyl methylphosphonofluoridate nerve gas).
GP ——— General purpose.
H ——— Mustard gas.
HBX ——— RDX-TNT-AL type explosive.
HC ——— High capacity.
HC ——— Hexachlorethane mixture (smoke).
HD ——— Distilled mustard.
HE ——— High explosive.
HEAT ——— High explosive anti-tank.
HEI ——— High explosive incendiary.
HEIT ——— High explosive incendiary tracer.
HET ——— High explosive tracer.
HPAG ——— High performance air to ground (rocket).
HN ——— Nitrogen mustard gas.
HVAR ——— High velocity aircraft rocket.
ICC ——— Interstate Commerce Commission.
ILLUM ——— Illuminating.
IM ——— Thickened gasoline.
IN ——— Inert.
INCEND ——— Incendiary.
L ——— Lewisite.
LC ——— Light case.
LE ——— Low explosive.
L and F ——— Loaded and fuzed.
L and P ——— Loaded and plugged.
M ——— Model (Army).
Maj Cal ——— Major caliber.
MCBD ——— Major caliber base detonating.
MG ——— Magnesium.
MK ——— Mark.
MM ——— Millimeter.
MIN CAL ——— Minor caliber.
Mod ——— Modification.
MTF ——— Mechanical time fuze.
NC ——— Nitrocellulose.
NF ——— Nose fuze.
NH ——— Non-hygroscopic.
Nonf. G ——— Nonflammable compressed gas.
NP ——— Thickened gasoline.
O/H ——— Overhauled.
ORD ——— Ordnance.
Oxy M. ——— Oxidizing material.
PD ——— Point detonating.
PDF ——— Point detonating fuze.
PENT ——— Pentolite.
PERC ——— Percussion.
Pois. A ——— Poison gas or liquid, Class A.
Pois. B ——— Poison liquid or solid, Class B.
Pois. C ——— Tear gas, Class C.
Pois. D ——— Radioactive material, Class D.
PRAC ——— Practice.
PRI ——— Primer.
PROJ ——— Projectile.
PS ——— Chlorpicrin.
PT ——— Thickened fuel.
PWP ——— Plasticized white phosphorus.
RD ——— Round.
RDX ——— Cyclotrimethylenetrinitramine (cyclonite).
SA ——— Small arms.
SAP ——— Semi-armor piercing.
SCAR ——— Sub-caliber aircraft rocket.
SEIS ——— Ship's emergency identification signals.
SF ——— Semi-fixed.
SP ——— Smokeless powder.
SQ ——— Super quick.
T ——— Tentative model designation.
TET ——— Tetryl (trinitrophenylmethyl nitramine).
TF ——— Time fuze.
TH ——— Thermate or Thermite.
TNT ——— Trinitrotoluene.
TPX ——— Torpex.
VT ——— Variable time (Proximity) (VT).
w ——— with.
w/o ——— without.
WP ——— White phosphorous.

§ 146.29–13 *Permit for handling military explosives.* (a) Shipments of military explosives and military lethal chemicals except small arms ammunition without explosive bullets shall not be laden on nor discharged from any vessel at any port or place in the United States, its territories or possessions (not including the Panama Canal Zone) until authorization has been obtained by the owner, agent, charterer, master, or person in charge of the vessel from the District Commander of the U. S. Coast Guard, Captain of the Port, or other officer designated by the District Commander.

(b) Before a permit is issued authorizing the loading or discharging of military explosives or military lethal chemicals in accordance with paragraph (a) of this section, the permittee shall file a written application for a permit authorizing the loading or discharging. When filed, the application for loading shall be accompanied by a preliminary manifest of all explosives or other dangerous articles comprising the cargo of the vessel together with a preliminary cargo stowage plan showing the proposed stowage of all such cargo. Changes in final stowage from that shown in the preliminary cargo stowage plan may be made upon approval of the issuing officer.

§ 146.29–15 *Authority to load, handle or discharge; facilities and use.* (a) Military explosives, except small arms without explosive bullets, shall not be handled, stowed, stored, loaded on, or discharged from a vessel except at one of the following:

(1) Explosives anchorages; areas upon the navigable waters that are designated explosives anchorages under the applicable provisions of 33 CFR Part 202 (Anchorage Regulations) within which a vessel may anchor or moor to handle, stow, store, load, or discharge explosives as cargo.

(2) Waterfront facilities approved by the Captain of the Port or District Commander as explosives loading piers to which a vessel may moor to handle, stow, store, load, or discharge military explosives as cargo.

(3) Waterfront facilities approved by the Captain of the Port or District Commander as ammunition loading piers to which a vessel may moor to handle, stow, store, load, or discharge ammunition as cargo except the following classes: II–A, IX–A, IX–B, IX–C, X–A, X–B, X–C, X–D, XI–A, XI–B, XI–C and XI–D.

(4) The Captain of the Port or District Commander may designate a temporary location for a specific loading of Classes XI–A, XI–B, XI–C and XI–D ammunition.

(b) A vessel, subject to the regulations in this part, may load or discharge military explosives at any Army or Navy depot, arsenal, navy yard, port of embarkation or other facility under the direct control and operation of the Navy, or Army, provided a permit authorizing such loading has been granted by the Captain of the Port. (See §§ 146.29–19, and 146.29–21.)

(c) In an emergency arising by reason of military necessity or casualty, a vessel may upon authorization by a Captain of the Port, load or discharge military explosives in any location authorized by said Captain of the Port.

§ 146.29–17 *Prohibited explosives.* (a) Explosives prohibited by subsection 3 of R. S. 4472, as amended (46 U. S. C. 170) (fulminates or other detonating compounds in bulk in dry condition, or explosive compositions that ignite spontaneously or undergo marked decomposition when subjected for 48 consecutive hours to a temperature of 167 degrees Fahrenheit, or compositions containing an ammonium salt and a chlorate, or other like explosives) shall not be accepted by any vessel.

(b) A passenger vessel shall not accept any Class A or Class B military explosives for transportation as cargo.

§ 146.29–19 *Explosives loading supervisory detail.* (a) There may be assigned to every vessel, subject to the regulations in this part, loading, handling, or discharging military explosives at an explosives anchorage or waterfront facility as may be approved by the Captain of the Port or the District Commander for the loading or unloading of military explosives, a Coast Guard detail to supervise such loading, handling or discharging. The owners, agents, charterers, masters or persons in charge of the vessel and all persons engaged in the handling, loading and stowage of the military explosives shall obey all orders, oral or written, that are given by the person in charge of such assigned detail.

(b) A vessel, subject to the regulations in this part, loading, handling, or discharging military explosives except small arms ammunition without explosive bullets at a Navy or Army depot, arsenal, navy yard, port of embarkation or other facility under the direct control and operation of the Navy or Army shall apply to the Captain of the Port for a permit for such loading, handling or discharging. A Coast Guard detail may be assigned to such a vessel unless the Commanding Officer of such Navy or Army facility declines the detail.

§ 146.29–21 *Personnel identification.* The provisions of this section shall apply to vessels loading, handling or discharging military explosives in accordance with the provisions of § 146.29–19 (a).

(a) No person shall enter upon a vessel loading, handling, or discharging military explosives unless such person first identifies himself to the satisfaction of the Coast Guard detail.

(b) Every person who is permitted to enter into a magazine or a hold or compartment of a vessel wherein military explosives are being handled or stowed shall provide the Coast Guard repre-

sentative with his name and address and the name and address of the firm employing him, furnishing satisfactory identification to substantiate such information.

(c) A person who, for any reason, is requested to leave a vessel loading, handling or discharging military explosives by the person in charge of the Coast Guard detail shall immediately obey the request and not return until permission is granted.

§ 146.29–23 *Ship's officer present.* (a) During the entire operation involving the building of a magazine, the preparation of holds, and the actual handling and stowage of military explosives, it shall be the responsibility of the master of the vessel to assign a deck officer of the vessel who shall be in constant attendance. It shall be these officers' responsibility to see that the provisions of the regulations in this part insofar as such provisions apply to the vessel, are complied with.

(b) It shall be these officers' further responsibility at the end of the work shift to see that all means of access to the partially loaded holds are closed off in such a manner as to provide the maximum safety and protection for the explosives stowed within the hold.

§ 146.29–25 *Fires and fire protection.* (a) No unnecessary fire shall be permitted on a dock, lighter, or vessel while loading, handling, or discharging military explosives.

(b) Every fire deemed necessary must be properly safeguarded and for the entire period of cargo transfer shall be in constant charge of a competent person assigned for that purpose by the master or by the person in charge of the vessel or by the person in charge of the dock.

(c) (1) Every vessel engaged in the handling and transfer of military explosives and equipped with means for power, heating, cooking, or lighting involving use of smoke pipes or stacks shall have such smoke pipes and/or stacks protected by spark screens. For the purpose of screening smoke pipes, vessels shall be divided into two categories. Large or ocean vessels shall have their main smoke pipes protected by screens of not larger than ½-inch mesh and small or inland vessels and small or auxiliary smoke pipes on large vessels by screens not larger than ¼-inch mesh

(2) Insofar as practicable, unless the barge, lighter, etc. is loading or discharging military explosives to or from the vessel, barges, lighters, towboats, and other types of vessels shall not come alongside a vessel handling, stowing, storing, loading, discharging or transporting military explosives opposite the area where hatches serving a hold containing explosives are open. (See § 146.-29–73 (f).)

(3) This paragraph is not applicable to vessels transiting main channels contiguous to explosives loading facilities or anchorages.

(4) Vessels loading or unloading Class I ammunition at waterfront facilities not designated by the Captain of the Port as explosives loading piers do not require screening of smoke pipes and/or stacks.

(d) Welding or cutting operations involving the use of open flames or arc shall not be undertaken on a vessel having military explosives on board as cargo, except in case of an emergency affecting the security of a vessel, or for the purpose of welding pad eyes, angle bars or other devices to the deck for securing deck cargo. Such welding or cutting shall be done only on special permission of the Captain of the Port, and then only in the presence of an officer of the Coast Guard detail and in conformity with said officer's instructions.

(e) The cleaning of fireside of boilers shall not be undertaken on a vessel while at an explosives or ammunition loading facility or anchorage except upon express permission of the Captain of the Port.

(f) All tubes and uptakes of the vessel must be thoroughly swept or blown and reasonably free of soot prior to the arrival of the vessel at an explosives or ammunition loading facility or anchorage. A vessel at an explosives ammunition loading facility or anchorage shall not blow tubes or uptakes except upon permission of the Captain of the Port and then the operation shall be under the supervision of the master or person in charge of the vessel with a licensed engineer in attendance.

(g) Bunkering of a vessel shall not be done while the vessel is at an explosives loading or ammunition loading waterfront facility. When at an anchorage, an explosives laden vessel may engage in bunkering operations provided explosives are not being loaded, handled, or discharged, and all holds in which explosives are stowed are secured.

(h) A vessel at an explosives or ammunition loading facility or anchorage shall not transfer fuel oil between its own fuel oil storage tanks or from its storage tanks to the settling tank, except under the close supervision of a licensed engineer who shall be in constant attendance until the operation is completed.

(j) The transfer of lubricating oils and cleaning oils, either from containers on board the vessel or by pipeline or hose shall be prohibited at an explosives or ammunition loading facility. However, the transfer on board the vessel of galley fuel oil may be authorized by the Captain of the Port when the galley stove is cold, or when the vessel is equipped with an overflow system which returns surplus fuel oil from the galley tanks back into the main storage tanks provided such transfer is under the supervision of the master or person in charge of the vessel with a licensed engineer in attendance.

(k) The fueling of powered lifeboats or units of the vessel's machinery shall not be done while the vessel is at an explosives or ammunition loading facility.

(l) Boiler room and engine room bilges must be clean and free of oil or unnecessary residue before the vessel proceeds to an explosives or ammunition loading facility or anchorage, and it is further required that the bilges be maintained in this condition during the entire time the vessel is moored at the explosives or ammunition loading facility or anchorage. Attention is invited to the provisions of the Oil Pollution Act, 1924, and the Refuse Act, 1899, which prohibit the discharge of oil into the navigable waters of the United States. The term "oil" means oil of any kind or in any form, including fuel oil, oil sludge, and oil refuse.

(m) On every vessel located at explosives loading facility or anchorage or ammunition loading facility no work shall be undertaken on the main propulsion machinery, auxiliaries or boilers that will render inoperative fire pumps, electric power or propulsion of the vessel without express authority of the Captain of the Port. When the repairs authorized make inoperative the main propulsion unit an auxiliary tug shall stand by.

(n) (1) Every self-propelled vessel having on board military explosives shall at all times maintain means of propulsion. When not under way, such a vessel shall have available on deck, fore and aft, hawsers capable of being used for emergency towing. The eye of such hawser shall be clear of the chock with messenger attached and ready to run and the ship's end shall be stopped off on the bitts to permit reasonable scope of hawser for towing. A heaving line made up and secured to the rail by rope yarn shall be bent to the messenger. Fire axes shall be kept conveniently at hand, fore and aft, to be used on the ship or passed to the dock for cutting mooring lines in case of an emergency.

(2) Nonself-propelled vessels having on board military explosives when moored or anchored shall have at least one tug for each facility or area at which they are moored or anchored.

(o) Every vessel loading or unloading military explosives shall display at its masthead by day a red flag at least 16 square feet in area or at least 10 feet above the upper deck if the vessel has no mast, and at night, while fast to a dock, a red light in the position specified for the flag.

(p) Any device, such as a radio, radar, etc. capable of radiating electromagnetic energy shall be de-energized by opening the main switches thereto, and these switches shall be tagged to warn personnel against reenergizing the circuits whenever the vessel is at an explosives or ammunition handling facility, at an explosive anchorage with a barge or other type of vessel containing explosives alongside, or when a hatch containing explosives is uncovered.

§ 146.29–27 *Fire hose.* (a) During the handling, loading, or unloading of military explosives the vessel shall "run out" or otherwise make ready for quick use a minimum of two lines of hose on the weather deck, one fore and one aft. These hoses shall be of sufficient length so that one or the other can reach all areas of the weather deck. The fire hose valves controlling these lines shall remain "cracked open" (except in freezing weather) so casual observation may indicate that water is available.

(b) Additional fire lines shall be "run out" or otherwise made ready at each hold or compartment working or con-

taining military explosives when the hatch serving the hold is open. These lines shall be of sufficient length to reach all portions of the hold or compartment.

§ 146.29–29 *Smoking.* (a) Smoking is prohibited on or near any vessel handling, loading or unloading military explosives at an explosives or ammunition loading pier. Smoking areas may be designated upon approval by the Captain of the Port provided such areas are located at a safe distance from the vessel. "No Smoking" warning signs shall be posted during operations of handling, loading or unloading such cargo. At least one such "No Smoking" sign shall be located on the pier at a reasonable distance from the vessel when such handling, loading, or unloading is taking place at a pier.

(b) Smoking is prohibited on or near any vessel handling, loading, or unloading explosives at an explosives anchorage, except the Captain of the Port may, with the concurrence of the master or person in charge of the vessel, designate a compartment as a smoking area. This compartment will be fitted with installed electric lighting devices without open flame. "No Smoking" warning signs shall be posted conspicuously in other parts of the vessel during operations of handling, loading, or unloading.

§ 146.29–31 *Liquor or drugs.* No person who, in the judgment of the master, person in charge of the vessel, or the officer in charge of the Coast Guard detail, is considered as being under the influence of intoxicating liquor or of drugs shall be permitted on board a vessel while operations involving the handling, loading, unloading, or transportation of explosives are being carried on, except if the person under the influence of intoxicating liquor or drugs is a bona fide member of the crew of the vessel involved, he may at the discretion of the Officer-in-Charge of the Coast Guard detail board the vessel: *Provided,* That the master or person in charge of the vessel will accept custody and full responsibility for said person: *And provided further,* That this person shall not be permitted to perform any work on the vessel while under the influence of intoxicating liquor or drugs.

§ 146.29–33 *Cargo working gear and equipment.* (a) Before military explosives are loaded or unloaded on or from a vessel the master or other person in charge of the vessel is required to ascertain by examination the adequacy, the condition and working order of all working equipment including slings, crates, baskets, boxes, chutes, mattresses, and tackle.

(b) Any and all equipment, which in the judgment of the master or other person in charge of the vessel is not adequate or in safe working condition shall be rejected by him and he shall prohibit its use and shall take such precautions as he may deem necessary to be certain such rejected equipment is not used for the purpose of loading or unloading explosives. The master or other person in charge of the vessel shall keep watch of all equipment used during the transfer of explosives and if any part of the equipment shows any defect or is damaged in use, work shall be stopped and the damaged or defective equipment repaired or replaced before permitting the loading or unloading to continue.

(c) This inspection of cargo working equipment shall apply to the vessel's equipment and to stevedore's or other contractor's equipment.

(d) The Captain of the Port or his representative may prohibit the use of any cargo working gear or equipment, including stevedore equipment, which he deems unsafe.

§ 146.29–35 *Lights, tools, and portable equipment.* (a) No artificial lights except electric lights, electric lamps, or electric floodlights shall be used while loading or unloading military explosives. Such light fixtures shall not be used unless protected against accidental breakage by metal guards. Portable electric lights shall be fitted with stout guards protecting the bulb. Wires of such lights shall be sound and show no evidence of liability to short circuit. When deemed necessary by the military service concerned with the shipment of the explosives due to the possible presence of explosive dust or vapors in the hold of the ship being worked, all electrical equipment and light fixtures used therein shall be of a type approved for the hazardous location as defined in the National Electric Code. This equipment shall be grounded and continuity of the grounding system assured by the applicable methods prescribed in the National Electric Code.

(b) Portable lights shall be so installed as to prevent any part of the light or its cable from coming in contact with the deck or the cargo. A hanging portable light shall not be suspended from its cord but shall be fitted with a gantline so installed that no strain is carried by the light cable. No portable light shall be taken into a hold or compartment in which the stowage of ammunition or explosives has been completed without prior approval by the Captain of the Port or his representative. A portable light that is permitted in a hold under these circumstances shall be so guarded and protected that neither the light nor the light cord shall be in bearing with any metal part of the vessel or with any of the ammunition or explosives, or the containers thereof.

(c) Flashlights of a non-spark type shall be provided by the vessel owner, agent or its master or other person in charge of the vessel, for personnel required to enter holds in which explosives are stowed.

(d) Members of the crew of the vessel and other persons permitted on board the vessel to aid and assist in loading, unloading or handling military explosives shall not be permitted to carry on their persons firearms, matches, flame producing devices, knives, bale hooks, metallic tools except as provided in paragraph (e) of this section or personal packages of any description, except the prohibition against knives shall not apply to the seaman's knife in possession of a member of the crew of the vessel, provided such crew member is not actually working the explosives or ammunition. Lunch boxes, pails, thermos bottles, other food containers or personal packages of any description shall not be brought on board a vessel unless such items have been examined and passed by the Coast Guard detail. Food containers that are passed on board the vessel shall not be stored in the hold in which explosives are being worked nor shall their contents be eaten in such hold. Persons engaged in handling and stowage of military explosives shall not wear shoes or boots shod or strengthened with iron nail or other spark producing metal unless such footwear is covered with rubber, leather, or other nonsparking material.

(e) The Captain of the Port may authorize the use of pinch bars of metal or wood, in "breaking out" or stowing unfuzed bombs, large caliber separate loading shells, and packages of ammunition shipped in heavy unit weight containers. He may also permit the use of saws and hammers that are actually powered by the hand or hand and arm, in the hold of a vessel when necessary in fitting dunnage or constructing a partition or a division bulkhead or installing protection required for the stowage of military explosives. The Captain of the Port may authorize spark proof electrically powered or pneumatic saws or hammers, but they shall not be used in any compartment containing military explosives.

(f) All electric wiring in holds in which explosives are to be stowed shall be inspected prior to the loading of explosives into the hold. The electrical circuits which terminate in holds in which explosives are to be stowed shall be deenergized by removing their fuses or inactivating their circuit breakers at the main panel prior to loading and these circuits shall remain deenergized while explosives are within the hold. The main panel shall be tagged to warn personnel against reenergizing these circuits.

§ 146.29–37 *Handling drafts of lumber.* All lumber in excess of 3 feet in length shall be handled into or out of the holds of vessels loading, unloading or containing military explosives or ammunition by use of a double sling. Small pieces of lumber used in chocking and dunnaging shall be handled in trays with sideboards. Cargo nets may also be used provided they are lined with canvas or similar fabric. Dunnage shall not be lowered directly onto stowages of ammunition or explosives. Landing mats or timbers shall be laid to receive such drafts.

§ 146.29–39 *Handling and slinging of explosives.* (a) All military explosives or chemical warfare agents in bulk shall be handled carefully. Packages and other containers shall not be dropped, dragged, tumbled, walked, slid over each other or over the deck or otherwise subjected to shock except that heavy containers of military explosives equipped with pulling bar assemblies and skids may be positioned in the holds of vessels by using the pulling bar assemblies to maneuver the containers for short distances at slow speed. Packages and

other containers shall not be rolled unless roling is specificaly premitted by the provisions governing handling as set forth in § 146.29–100.

(b) In transferring military explosives between pier facilities and vessels or from vessel to vessel, or within the hold of a vessel the items may be handled by hand, power operated mechanical hoist or power operated conveyor approved by the Captain of the Port, power operated cargo lift truck, hand truck or nonpowered (gravity) roller conveyor (hand controlled); or unless specifically prohibited by the regulations in this subpart, a specification chute and mattress may be used. (Refer to §§ 146.09–11 and 146.09–12 for specifications of chute and mattress.)

(c) Military explosives shall be hoisted and lowered carefully onto a mattress or other shock absorbing material. The Captain of the Port may authorize omission of a mattress when its use is unnecessary due to use of pallets or other special gear except when Classes III, VI, VIII and IX–C are being handled, loaded or unloaded.

(d) The Captain of the Port may permit the use of cargo-handling vehicles or equipment powered by internal combustion engines on docks, wharves or piers for the handling of military explosives under such conditions as he may prescribe. Such type vehicles or equipment shall not be used within a hatch of a vessel having military explosives in any hold within said hatch. Electric or battery powered vehicles or equipment of explosion-proof or spark-proof type may be used to handle military explosives on docks, wharves, piers or in the holds of vessels under such conditions as the Captain of the Port may prescribe. All power-operated cargo-handling vehicles or equipment shall at all times be maintained in safe mechanical, electrical and operating condition. The use of cargo-handling vehicles or equipment may be suspended or prohibited by the Captain of the Port or his representative when he considers such use inimical to safety.

(e) When handling, loading or unloading by mechanical means, all military explosives shall be handled in the type equipment specified for the various classes of explosives in § 146.29–100. Military explosives shall be arranged on trays so that no portion of the military explosives or containers overhangs the tray. For trays provided with sideboards, military explosives or containers shall not extend above the sideboards to a height exceeding one-third of the vertical dimension of the item as stowed on the tray. Rope net slings with pieplates, pallet, skipboard or similar base shall be so loaded that when lifted a minimum displacement of items shall occur and the cargo net shall completely encompass the entire load except on its topside.

(f) The mesh of a cargo net shall be of such size as will prevent any item or container of military explosives in the draft from passing through the mesh under any possible circumstances.

(g) Drafts shall not be raised or stopped in lowering by sudden application of power or brake. Drafts shall not be unloaded by tripping or freeing one side of the net, tray, or pallet and tumbling the ammunition or explosives out of the gear. All drafts, beams, shackles, bridles, slings, hooks, etc. shall be hand freed before the winch takes control. Slings shall not be disengaged by hand unhooking and then dragged from under draft by means of winch. Handles or beckets on ammunition packages shall not be used for slinging purposes.

(h) Blasting caps, detonators, primer-detonators, fulminate of mercury and initiating or priming explosives as defined in the regulations in this part shall be considered as constituting a distinct class of dangerous explosives, and because of the hazard involved they shall be handled with extreme care.

(j) "Cant" or barrel hooks shall not be used for raising or lowering a barrel, drum, depth bomb, depth charge or other container of military explosives. Metal bale hooks shall not be used in handling packages of explosives.

(k) Combination woven rope and wire slings are not permitted for use in handling explosives. A sling that is formed by use of an open hook shall not be used in hoisting or lowering a draft of military explosives.

(l) Wire rope or wire rope assemblies including splices or fittings thereof, used in handling military explosives shall be kept bare to permit ready inspection of its safe working condition. Mechanical type endings may be used in lieu of hand splices provided such endings have a minimum breaking strength equal to the catalog strength of wire rope from which it is made.

(m) Bombs shall not be handled by attaching ship's cargo gear to the lifting lug or suspension lugs.

§ 146.29–41 *Weight per draft.* To eliminate excessive drift, slings will be as short as practicable when handling military ammunition or explosives. The maximum permitted weight per draft of all classes of military explosives shall be as follows for a 5 ton boom. The weights per draft may be increased proportionately for booms of greater capacity. In all instances the allowance shall remain as 10 percent. For example, in paragraph (d) (2) of this section, the maximum weight of drafts consisting of one or more palletized units of Class V or VII military explosives shall not exceed 4,400 pounds when using a five ton boom; however, if a ten ton boom is used the weight of the draft may be increased to 8,800 pounds (8,000 pounds plus 10 percent of same).

(a) *Class I.* (1) When handled by pallet, skipboard, or tray fitted with cargo net or sideboards shall not exceed 3,000 pounds plus 10 percent.

(2) Drafts consisting of one or more palletized units shall not exceed 4,000 pounds plus 10 percent.

(b) *Classes IIA, IIB, IIC, IID, IIE, IIF, IIG, IIH, IIJ, IVA, IVB, IXA, IXB.* (1) When handled by pallet, skipboard, tray, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 pounds plus 10 percent.

(2) Drafts consisting of one or more palletized units shall not exceed 4,000 pounds plus 10 percent.

(c) *Classes III, VI.* (1) When handled by tray fitted with sideboards shall not exceed 2,400 pounds plus 10 percent.

(2) Drafts consisting of one or more palletized units shall not exceed 4,000 pounds plus 10 percent.

(d) *Classes V, VII.* (1) When handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 pounds plus 10 percent.

(2) Drafts consisting of one or more palletized units shall not exceed 4,000 pounds plus 10 percent.

(3) Single shells weighing in excess of 2,200 pounds must be loaded or unloaded one at a time.

(e) *Class VIII.* (1) When handled by tray fitted with sideboards shall not exceed 1,000 pounds plus 10 percent.

(2) Drafts consisting of one or more palletized units shall not exceed 2,400 pounds plus 10 percent.

(3) The maximum permitted weight for lift of a portable magazine containing Class VIII ammunition shall not exceed 2,400 pounds plus 10 percent.

(f) *Class IX–C.* (1) When handled by tray fitted with sideboards shall not exceed 1,000 pounds plus 10 percent.

(2) The maximum permitted weight for purpose of lift of a portable magazine containing IX–C explosives shall not exceed 2,400 pounds plus 10 percent.

(g) *Classes X–A, X–B, X–C, X–D, X–E.* (1) When handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 pounds plus 10 percent.

(2) When handling bombs, more than one to a draft, by sling method or in palletized units, the draft shall not exceed 4,000 pounds plus 10 percent.

(3) Table of limiting loads applicable when handling bombs by sling method:

Weight of individual bomb or cluster:	*Maximum limit in units per draft*
1 pound to 250 pounds plus 10 percent per unit	1
276 to 500 pounds plus 10 percent per unit	1
551 to 1,000 pounds plus 10 percent per unit	1
1,101 to 2,000 pounds plus 10 percent per unit	2
Over 2,200 pounds	1

(4) Single items or assembled units (other than palletized), designed to be handled as a unit, may be loaded regardless of weight provided the cargo handling gear is of a design capable of handling a working load at least 50 percent additional to the actual weight of the item or unit comprising the draft, and provided further the integrity of the cargo handling gear is unimpaired.

(h) Classes *XI–A, XI–B, XI–C, XI–D.* (1) When handled by trays, skipboards, pallets or pieplates fitted with cargo nets or sideboards shall not exceed 2,400 pounds plus 10 percent.

(2) Drafts consisting of one or more palletized units shall not exceed 4,000 pounds plus 10 percent.

(3) Single bombs or other unit containers weighing in excess of 2,200 pounds must be loaded or unloaded one at a time.

(j) A tray with a top and so constructed that it may be considered equivalent to a palletized unit may, sub-

just to the approval of the Captain of the Port, be permitted a maximum weight per draft of 4,000 pounds plus 10 percent. This top may be constructed of other material than the tray, provided it serves to make the tray an integral unit.

§ 146.29-43 *Requirement for the opening of hatches*—(a) *Vessels at explosives loading piers or at ammunition loading piers.* (1) A weather deck hatch through which ammunition or explosives are being worked shall have sufficient hatch covers and hatch beams removed across the entire width of the hatch so that the resulting opening, measured parallel to the side of the vessel, is at least equal to twice the longest axis of the largest draft being loaded.

(2) Strongbacks or hatch beams left in place shall be firmly secured by hatch batten or other approved means.

(b) *Vessels at explosives anchorages.* A weather deck hatch through which ammunition or explosives are being worked shall have all hatch covers and all hatch beams removed unless otherwise authorized by the Captain of the Port.

(c) *Vessels at explosives anchorages having a magazine constructed in the square of a weather deck hatch.* Sufficient hatch covers and hatch beams shall be removed from the weather deck hatch to expose the entire magazine.

(d) *General requirements.* (1) During the working of ammunition and explosives to or from the deep holds, the tween-deck hatch openings shall at all times be equal to, if not greater than, the weather deck hatch openings.

(2) The use of open hooks in removing or replacing hatch beams or hatch strongbacks is prohibited. Closed hooks, shackles or T bars shall be used in this operation.

§ 143.29-45 *Loading or unloading military explosives and other cargo.* (a) Military explosives shall not be loaded or unloaded in a hatch at the same time that other cargo is being worked in any of the holds serviced through said hatch.

(b) Military explosives shall not be loaded or unloaded from the same hatch from both sides of the ship simultaneously, unless the hatch is fitted with cargo handling gear located at both the forward and after ends of the hatch. A vessel so equipped may also use both sets of cargo handling gear simultaneously from the same side of the vessel.

(c) When military explosives are stowed in a hold below one in which any cargo is being worked the 'tween-deck hatch dividing the two holds will have all of its covers securely in place.

(d) Military explosives may be loaded in a hold before or after other cargo, provided that all precautions are taken to assure full protection to the explosives against the hazard of articles being dropped from the cargo sling. When possible hatches should be partially covered to assure such protection.

(e) Cargo drafts being loaded or unloaded shall not be handled over explosives or other dangerous articles that are stowed "On deck".

(f) Any deck loads over which military explosives must be passed shall be limited in height to that of the hatch coaming, bulwark, or three feet, whichever is greater.

§ 146.29-47 *Packing and marking.* Military explosives shall not be offered to vessels or accepted by vessels subject to the regulations in this part unless they are in proper condition for transportation and are packed, marked, labeled, described, certified and otherwise acceptable in accordance with the applicable provisions of the regulations in this part.

§ 146.29-49 *Stowage on board barges.* (a) Barges subject to the regulations in this part, engaged in the transfer of explosives between receiving points and delivery points within the harbors, bays, sounds, lakes, and rivers, including the explosives anchorages on the navigable waters, shall conform to the applicable provisions of §§ 146.10-1 to 146.10-50, inclusive. Ammunition or explosives in bulk, in combustible outside packages, stowed "On deck in open" shall after loading and during transportation be covered by fire resistant and/or flame proof tarpaulins securely lashed in place.

(b) Notwithstanding the requirements of this subpart relative to the stowage of detonators, blasting caps and fuzes, Class VIII, such articles may be stowed "On deck" on Class AA and Class AB barges with other ammunition or explosives in bulk stowed thereon, provided a sandbag barrier of at least 2 feet in thickness intervenes between the ammunition or explosives in bulk and the detonators, blasting caps or fuzes. When both are stowed "On deck" the height of this barrier shall be at least equal to the height of the stowage of the detonators, blasting caps or fuzes, or the ammunition or explosives in bulk, whichever is highest. The barrier shall either completely surround the detonators, blasting caps or fuzes or extend across the width of the barge. With this type of barrier no additional separation is required. For Class AC barges, the stowage of detonators, blasting caps or fuzes, Class VIII, shall, when no permanent steel bulkhead intervenes, be separated from the stowage of ammunition or explosives in bulk by a distance of 40 feet; with a permanent steel bulkhead intervening, detonators, blasting caps or fuzes shall be separated from the stowage of explosives in bulk by a distance of 25 feet and from the stowage of ammunition by a distance of 10 feet. If, under deck, a 2-foot sandbag barrier is utilized to intervene between the stowage of ammunition or explosives in bulk, it shall be considered as though a permanent steel bulkhead or deck intervenes. Notwithstanding the provisions of § 146.10-50, Class CA and Class CB barges may transport ammunition on deck.

§ 146.29-51 *Stowage on board vessels.* (a) All articles of cargo classified as military explosives by the regulations in this subpart shall be stowed on board a vessel in conformity with the provisions of the regulations in this subpart.

(b) Mixed stowage of ammunition or explosives in bulk with other ammunition or explosives, or other dangerous articles or substances, or combustible liquids or hazardous articles shall be in conformity with the provisions of the explosives and hazardous munitions admixture charts, § 146.29-99, the classification, handling and stowage chart § 146.29-100 and other applicable specific provisions of this subpart.

(c) Specifications governing construction and location of magazines and lockers and the preparation of cargo compartments to be used in the stowage of military ammunition are detailed in §§ 146.29-71 to 146.29-95, inclusive.

§ 146.29-53 *Stowage of military explosives in holds containing coal.* Unless expressly authorized by the Commandant of the Coast Guard military explosives shall not be stowed in a hold containing coal as cargo nor in any hold above, below or adjacent to one containing coal.

§ 146.29-55 *Stowage of military explosives in holds containing household or personal effects and/or mail as cargo.* Unless expressly authorized by the Commandant of the Coast Guard, military explosives shall not be stowed in a hold containing household or personal effects and/or mail as cargo, nor in the hold above or below the hold containing any of these items. However, this requirement shall not apply to vessels having on board military explosives of the Class I category only.

§ 146.29-57 *"On deck" stowage.* (a) Articles classified as military explosives, the stowage of which is permitted "On deck" by the regulations in this subpart shall be properly secured. Such security may be obtained by using existing vessel's structures such as bulwarks, hatch coamings, shelter deck and poop bulkheads, as part boundaries and effectively closing in the cargo by fitting angle bar closing means, secured by bolting to clips or other parts of the ship's structure. Lashing of deck stowage permitted, provided eye pads are fitted to carry such lashings. Guard rails shall not be used to secure such lashings.

(b) Bulky articles may be secured by lashing with individual wire rope lashing or other equally efficient means.

(c) Shoring of such bulky articles of cargo shall be in addition to the foregoing means of securing.

(d) Military explosives stowed "On deck" shall not be stowed within a distance of 20 feet of an incinerator, the topside terminus of an ash hoist or a coal or oil fire galley or bake shop. For vessels fitted with electrically operated galleys and bake shops, the military explosives stowed on deck may be stowed not closer than 10 feet of such galleys and bake shop provided no incinerator or topside terminus ash hoist is within a distance of 20 feet of such stowage.

§ 146.29-59 *Stowage adjacent to other dangerous articles.* As noted in § 146.29-11, missile and rocket fuels or oxidizers listed in Classes XI-C and XI-D of § 146.29-100 are excluded from the provisions of this section, and compatibility will be in accordance with the chart in § 146.29-99.

(a) *Flammable liquids.* (1) Military explosives shall not be stowed in the same hold, nor in any hold below, any hold above or a hold adjacent to one in which flammable liquids are stowed. Military vehicles including ducks, buffaloes, alligators and similar amphibious types of craft, referred to in this subpart as "vehicles" or "military vehicles", using a flammable liquid as fuel may be stowed in holds adjacent to a hold in which military explosives are stowed provided the fuel is confined to the vehicle's tank and is not in excess of approximately 75 percent of the capacity of the fuel tank.

(2) Military vehicles, landing craft and small boats using flammable liquid as fuel and having the fuel confined to the vehicle's or boat's tank and not in excess of approximately 75 percent of the capacity of said tank may be stowed "On deck" over a hold in which military explosives are stowed: *Provided,* That the weather deck is tight and the cargo hatch is fitted with a tight raised coaming and that such stowage is not made over the square of the hatch, except that amphibious type vehicles, landing craft or boats having fuel tanks installed within a tight hull may be stowed over the square of a hatch.

(3) Flammable liquids as cargo shall not be stowed "On deck" immediately above a hold in which military explosives are stowed. The applicable provisions of §§ 146.21–1 to 146.21–100, inclusive, shall be observed in the stowage of flammable liquids "On deck".

(b) *Flammable solids or oxidizing materials.* (1) Military explosives shall not be stowed in the same hold nor in any hold above or below or a hold adjacent to one in which flammable solids or oxidizing materials are stowed except as specifically authorized by the provisions of § 146.29–100.

(2) Flammable solids or oxidizing materials may be stowed "On deck" over a hold in which military explosives are stowed: *Provided,* That the weather deck is tight and the cargo hatch is fitted with a tight raised coaming and such stowage is accomplished by means of a crib and platform so constructed as to provide a free space of at least 6 inches in height between the deck and the floor of the crib in such a manner as to allow flushing of any leakage that may occur: *And provided further,* That such stowage is not made over the square of the hatch.

(c) *Corrosive liquids.* (1) Military explosives shall not be stowed in the same hold nor in the hold below one in which corrosive liquids are stowed except as specifically authorized by the provisions of § 146.29–100. Corrosive liquids may be stowed "On deck" over a hold in which military explosives are stowed: *Provided,* That the weather deck is tight and the cargo hatch is fitted with a tight raised coaming and such stowage is accomplished by means of a crib and a platform so constructed as to provide a free space of at least 6 inches in height between the deck and the floor of the crib in such a manner as to allow flushing of any leakage that may occur: *And further provided,* That such stowage is not made over the square of the hatch.

(2) The substances listed below shall not be transported on board a vessel which is carrying in excess of 100 tons of ammunition or explosives:

Acid sludge.
Bromine.
Chloracetyl chloride.
Dimethyl sulfate.
Hydrofluoric acid, anhydrous.
Nitrating (mixed) acid.
Nitric acid.
Phosphorus oxychloride.
Phosphorus tribromide.
Phosphorus trichloride.
Spent acid (sulfuric or mixed).
Sulfur chloride.

(d) *Military vehicles with electrolyte.* Notwithstanding the provisions of §§ 146.23–1 to 146.23–100, electrolyte of not over 47 percent strength (39° Baumé) may be accepted for transportation and be stowed on board vessels carrying military explosives under the following conditions of packing:

(1) In glass or earthenware containers, not exceeding 160 ounces capacity (one imperial gallon) in fiberboard cartons of a size to permit cushioning with an incombustible, absorbent material of a sufficient amount to absorb the contents of the container in event of breakage. The outside container shall consist of a wooden box (ICC 15A, 16B or Army Specification) in which 1, 2, 3, or 4 fiberboard cartons may be packed. The outside containers shall carry the white (acid) label. No military ammunition shall be included within this package.

(2) Electrolyte packed in accordance with provisions set forth in subparagraph (1) of this paragraph may be stowed:

(i) "On deck in open" including deck areas over holds containing military explosives.

(ii) "Tween-deck" or "Under deck" in holds adjacent to or in any hold below a hold containing military explosives.

(3) Electrolyte, when packed in accordance with the provisions of subparagraph (1) of this paragraph, may be accepted for transportation when securely fastened within or on a military vehicle or other military equipment whether such vehicle or equipment is shipped crated, boxed, or without crating or boxing. Such military vehicles or military equipment, when shipped crated or boxed, may be accepted for transportation when the container of electrolyte is securely fastened on the inside of the shipping crate or box containing the vehicle or military equipment. When so shipped, the overall crate or box shall carry the white (acid) label and shall be marked "This side up" and "Inside packages comply with prescribed specifications."

(4) Electrolyte packed in accordance with the provisions of subparagraph (1) of this paragraph when offered for transportation under the conditions set forth in subparagraph (3) of this paragraph, may be stowed as follows:

(i) "On deck in open", including deck areas over holds containing military explosives;

(ii) "Tween-deck" or "Under deck" in holds adjacent, any hold below or any hold above holds containing military explosives; or,

(iii) In the same hold containing Class I, IV–B, V, VII, X–A, X–B, X–C, or X–D, provided the stowage of military vehicles and the stowage of ammunition are separated by a division bulkhead or a 2-inch dunnage floor.

(5) Military vehicles (crated or uncrated) containing an electrolyte storage battery shall not be stowed in the same hold over military explosives stowed therein. Such vehicles may be stowed in the same hold under or alongside of military explosives stowed therein: *Provided,* That all the applicable provisions of this section are observed: *And provided further,* That the vehicles are processed, the fuel tank drained dry, the battery terminal leads disconnected, taped and protected against short circuit.

(6) Military vehicles or military equipment as used in this section includes naval vehicles or naval equipment.

(e) *Flammable compressed gases.* (1) Military explosives shall not be stowed in the same hold nor in any hold below, any hold above or a hold adjacent to one in which flammable compressed gases are stowed.

(2) Flammable compressed gases shall not be stowed "On deck" over a hold in which any Class II–A, II–B, II–C, II–D, II–E, II–G, V, VI, VII, VIII, IX–A, IX–B, IX–C, X–A, X–B, X–C, X–D, XI–A, XI–B, or XI–C is stowed.

(3) Flammable compressed gases may be stowed "On deck" over a hold in which Class I, II–F, II–J, III, IV–A, or IV–B is stowed: *Provided,* That the weather deck is tight and the cargo hatch is fitted with a tight raised coaming, and such stowage is accomplished by means of skids at least 6 inches in height off the deck or a crib and platform so constructed as to provide a free space of at least 6 inches in height between the deck and the floor of the crib. Other applicable provisions of §§ 146.24–1 to 146.24–100, inclusive, shall be observed. Stowage may be over the square of the hatch.

(f) *Non-flammable compressed gases.* Ammunition of the following Classes I, II–G, IV–A, IV–B, V, and VII may be stowed in the same hold or compartment with non-flammable compressed gases provided the two stowages are separated by a type "A" dunnage floor or a division bulkhead. This mixed stowage is not permitted for the following non-flammable gases: Boron trifluoride, chlorine, oxygen and sulphur dioxide.

(g) *Poisons*—(1) *Class "A".* Classes I and II–F ammunition may be stowed in the same hold or compartment with Class "A" poisons provided the two stowages are separated by a type "A" dunnage floor or a division bulkhead.

(2) *Class "B".* Ammunition of the following classes, I, II–F, IV–A, IV–B, V, VII, XI–A, and XI–B may be stowed in the same hold or compartment with class "B" poisons: *Provided,* That the two stowages are separated by a type "A" dunnage floor or a division bulkhead.

(3) *Class "C" (tear gas).* Ammunition of the following classes I, II–F, II–G, IV–A, IV–B, V, VII, XI–A, and XI–B may be stowed in the same hold or compartment with Class "C" poisons: *Provided,* That the two stowages are sep-

arated by a type "A" dunnage floor or a division bulkhead. Class II–B may also be stowed in the same hold with Class "C" poisons: *Provided*, That the two stowages are separated by a type "A" dunnage floor or a division bulkhead: *And provided further*, That the Class II–B ammunition is given top stowage.

(4) *Class "D" (radioactive material).* Military explosives shall not be stowed in the same hold in which Class "D" poisons are stowed.

(h) *Hazardous articles.* Military explosives shall not be stowed in the same hold or in the hold below, the hold above or a hold adjacent to one in which hazardous articles are stowed.

(i) *Combustible liquids.* (1) Military explosives shall not be stowed in the same hold nor in the hold below one in which combustible liquids are stowed.

(2) Combustible liquids may be stowed "On deck" over a hold in which military explosives are stowed: *Provided*, That the weather deck is tight and the cargo hatch is fitted with a tight raised coaming and such stowage is accomplished by means of a crib and a platform so constructed as to provide a free space of at least 6 inches in height between the deck and the floor of the crib in such a manner as to allow flushing of any leakage that may occur. *And provided further*, That such stowage is not made over the square of a hatch.

(k) *"On deck" stowage.* When containers of flammable liquids, flammable solids or oxidizing materials, corrosive liquids, compressed gases, poisons, combustible liquids or hazardous articles are stowed "On deck", such containers shall not be stowed within 12 inches of any steam pipe fitted on deck.

§ 146.29–61 *Stowage with nondangerous cargo in the same hold.* (a) Military explosives that are stowed in the same hold with nondangerous cargo shall be protected from damage likely to be caused by heavy nondangerous cargo. Shafting, steel bar, steel shapes, pipe, heavy machinery, military vehicles (uncrated), and similar types of cargo shall, when stowed in the same hold with military explosives be so isolated or dunnaged or secured as to prevent damage to military explosives or magazines containing said substances, or temporary bulkheads protecting explosive stowages, under any conditions likely to be encountered during the voyage.

(b) When nondangerous cargo is to be stowed adjacent to the exterior of a magazine, wooden cargo battens of not less than commercial 2" x 4" size spaced not more than 12 inches, center to center, shall be fitted horizontally to the uprights forming the frame of the magazine.

§ 146.29–63 *Stowage and dunnaging of ammunition and containers of explosives in bulk.* (a) Military explosives shall be so stowed and dunnaged as to prevent damage to the cargo or the vessel from shifting cargo caused by forces incident to the voyage of the vessel. Nothing within this paragraph shall be construed as requiring the entire interior of the cargo compartment to be covered with dunnage.

(b) Containers of military explosives marked, "This side up" or otherwise marked directing their stowage shall be so stowed.

(c) Kegs of black powder shall be stowed in an upright position, the bungs or other filling openings "up". Each tier shall be floored off.

(d) Metal containers of smokeless powder in bulk or metal tanks or other containers of propellant charges having closure means which protrude beyond the chime or the surface of the container shall be so dunnaged as to prevent damage occurring to such closures.

(e) The uppermost tier of military explosives shall be so secured to the mutual satisfaction of the Captain of the Port and the Master of the vessel by tomming, bracing, strapping, top stowing with permissible cargo of sufficient unit weight and quantity or other effective means that no displacement can occur either upwardly or laterally.

(f) Military explosives shall be so stowed that they or the containers are not liable to be pierced by the dunnaging or crushed by superimposed weight.

(g) Containers of military explosives shall not be "cant" stowed. They shall be stowed in full bearing on dunnage or both end and center bearing on dunnage. Broken stowage may at the turn of the bilge, be dunnaged out with cordwood or otherwise so cribbed as to provide maximum bearing attainable for the container to be stowed in the tier above. Broken stowage in other locations in the hold may be compensated for by cribbing out or by the insertion of sufficient dunnage to provide proper bearing for packages in the tier above.

(h) Fixed or semi-fixed ammunition in fiber containers, crated or uncrated, may be stowed on its base or on its side. Dunnaging shall be accomplished in such manner as to bear only upon the metal part of the container. No dunnage or weight shall bear directly upon the fiber portion of the container.

(j) Separate-loading shells, boxed, crated, unboxed, or uncrated may be stowed on their bases or on their sides except as otherwise provided for Army WP filled ammunition in the stowage requirements for Class II–D ammunition, § 146.29–100.

(k) When tween-deck holds of cargo vessels are utilized for the stowage of military explosives, the maximum permissible deck load for such tween decks shall not be in excess of 45 pounds per square foot of tween-deck space for each foot of tween-deck height, except where the deck and hatch structure of ships have been specially designed or reinforced for the carriage of heavy loads the Captain of the Port may permit loading in accordance with these schedules of increased intensity of loading when they are furnished by the master or operator.

§ 146.29–65 *Damaged or leaking containers of explosives.* (a) Any container of explosives or chemical warfare agents showing evidence of failure, leaking of a liquid ingredient or inability to retain its contents shall not be accepted for transportation, storage, or stowage on board any vessel.

(b) Any container of an explosive when offered for transportation, storage, or stowage, showing excessive dampness or which is moldy or shows outward signs of any oil stain or other indications that absorption of the liquid part of the explosive is not perfect, or that the amount of the liquid part of the explosive is greater than the absorbent can carry, shall not be accepted for transportation. The shipper must substantiate any claim that a stain is due to accidental contact with grease, oil, or similar substances. In case of doubt the container shall be refused.

§ 146.29–67 *Defective ammunition.* Ammunition found to be defective while being unloaded from a barge, freight car, or other vehicle, shall not be placed on board a vessel. If found to be defective while on board the vessel, it shall, if at all possible, be removed from the vessel to an isolated location as quickly as possible.

§ 146.29–69 *Recoopering damaged packages.* Defective packages shall not be recoopered in the hold of a vessel. Such packages shall not be recoopered elsewhere on board the vessel except upon conditions authorized by the Captain of the Port. Replacing bomb shipping bands, loose covers, nose plugs or strapping containers is not classed as recoopering.

§ 146.29–71 *Constructing magazines.* (a) All work in connection with the construction of a magazine, or other conditioning of holds, decks, or hatches shall be completed before the actual loading of military explosives is undertaken except as provided in §§ 146.29–35 (e) and 146.29–81 (b). Magazine construction or other conditioning of a hold in which military explosives are not actually being loaded or which do not contain any military explosives is permitted.

(b) Sizes of material used for the construction of a magazine or other conditioning of holds, decks, or hatches, as set forth in the regulations in this subpart, are minimum. Increased sizes may be used, if desired. Nails shall not protrude beyond the surface of the lumber or other material authorized.

§ 146.29–73 *Preparation of magazines, decks, hatches and holds for handling military explosives.* (a) All magazines and holds shall be cleared of all rubbish and discarded dunnage and be swept, hosed down or cleaned by such other efficient method that will insure the compartment to be broom clean and free of any residue from cargo before commencing to load any military explosives. Bilges shall be examined and any residue of previous cargo removed therefrom.

(b) All decks, gangways, and hatches over or through which military explosives must be passed or handled in loading or unloading shall be freed of all loose material and shall be swept broom clean both before and after loading or unloading.

(c) The hatches or cargo ports opening into a compartment in which military explosives are stowed shall be kept closed at all times except during the operation of loading or unloading of the

compartments or during periods of short stoppages such as lunch breaks or while shifting of barges or railway vehicles. During the period of such stoppages the hold shall be protected as prescribed by the Captain of the Port. When a hatch is closed wooden hatch covers shall be covered with tarpaulins.

(d) No debris of any description which creates a fire hazard or a hazardous condition for persons engaged in the explosives handling operation shall be permitted to stand on the weather deck of a vessel while military explosives are being worked.

(e) (1) Hatch beams and hatch covers shall, where possible, be stowed on the opposite side of the hatch from that over which the military explosives are being worked. If this is impossible, they may be stowed on the working side of the hatch.

(2) Hatch beams shall be stowed or secured in a manner that will prevent them from rolling, rocking, turning or sliding.

(3) Hatch covers shall be so stowed as to form as level a platform as possible.

(f) During the time a hatch is open and military explosives are being worked or stowed, the vessel's officer on duty supervising the handling of explosives shall warn the masters of other vessels coming alongside and the operator of any dock equipment (capable of producing sparks) to stay clear of the area adjacent to open hatches as far as practicable.

§ 146.29–75 *Location of magazines and ammunition stowage.* (a) A cool location being an important factor, magazines shall be built and military explosives stowed in an authorized location in accordance with the following factors in the order listed. The Captain of the Port may authorize in his discretion a modification of the below established location priorities when circumstances so justify:

(1) A tween-deck hold, preferably a lower tween-deck.

(2) A lower hold.

(3) In the square of a hatch.

(4) A shelter deck in a location as far removed from uptakes or engine casing as possible.

(5) A forecastle, poop or permanent deck house provided the space is ventilated and does not contain any "In use" crew accommodations, nor vessel stores, and can be closed off from traffic while at sea.

(6) "On deck" stowage.

(7) Insulated spaces normally comprising refrigerator spaces may be used for the stowage of all classes of military explosives, except chemical ammunition: *Provided,* That all regulations relative to stowage of explosives with other dangerous articles of cargo are observed and the spaces may be ventilated sufficiently to provide a temperature consistent with the temperature of other holds of the vessel. When such spaces are fully ceiled, the entire compartment will be considered as a magazine, however, any pipes within the compartment shall be protected by horizontal cargo battens of a size not less than commercial 2" x 4", spaced not more than 12 inches apart, center to center and secured to 4" x 6" uprights spaced not more than 36 inches apart. Refrigerator spaces, the floors of which are lined with lead, shall not be used as a stowage for picric acid in bulk or ammonium picrate.

(b) When it is necessary to construct a magazine or to stow ammunition adjacent to the engine room, boiler room or coal bunker bulkheads, or the engine or boiler room uptakes or casings, the following provisions shall be complied with:

(1) A tight wooden temporary bulkhead shall be constructed at least one foot off the permanent bulkheads, uptakes or casings with the smooth side facing the stowage of the explosives or ammunition.

(2) When the permanent bulkhead is smooth on the cargo side, construction shall be of commercial 2-inch boarding secured to uprights of 4" x 6" size spaced not more than 30 inches apart in the tween or shelter deck, or 6" x 6" size spaced not more than 24 inches apart in the lower hold. Uprights shall not be stepped directly onto a metal deck or overhead. A 2" x 6" bearer to carry the upright shall be laid on the metal deck, and a 2" x 6" header shall be fitted against the underside of the overhead deck to receive the top of uprights. Top of uprights fitted against overhead deck beams may be wedged direct to the beam with 2" x 4" spacers fitted between. Suitable horizontal stringers shall be fitted between temporary and permanent bulkhead at the top and bottom, as well as intermediate stringers spaced a maximum of 5 feet. Uprights shall be securely fastened to horizontal stringers or horizontally braced at the top, bottom and center.

(3) When the permanent bulkhead stiffeners are on the cargo side, suitable uprights of not less than 2" x 4" may be installed against the permanent vertical stiffeners to give the required 12 inches off the bulkhead. If the permanent stiffeners are over 30 inches apart, center to center, 2½-inch boarding shall be used. Uprights shall be stepped and braced as required by the provisions of subparagraph (2) of this paragraph. Bulkhead stiffeners that do not extend the full depth of the cargo space shall not be used for this purpose.

(4) Other methods of construction using steel or wooden uprights, bolted to plates or lugs welded to deck beams, decks, or tank tops may be used provided the strength is equivalent to that obtained by the foregoing methods of construction.

(c) Stowage provided for military explosives shall be dry and except for deep tanks well ventilated.

(d) Ammunition as cargo shall not be stowed within a distance of 10 feet of a vessel's radio shack, receiving or transmitting apparatus, radio antenna or antenna lead-in. The same restriction applies to radar equipment.

§ 146.29–77 *Allocation of stowage.* Military explosives that are tendered to a vessel for transportation as cargo shall be stowed on board the vessel utilizing the type of stowage authorized for the particular ammunition or explosives in bulk by the provisions of § 146.29–100.

§ 146.29–79 *Types of stowage.* The types of stowage prescribed for military explosives are described as follows:

(a) Magazine stowage A.

(b) Ammunition stowage.

(c) Chemical ammunition stowage.

(d) Special stowage.

(e) Portable magazine stowage.

(f) Pyrotechnic stowage.

(g) Stowage of blasting caps, detonators, primer detonators, etc.

§ 146.29–81 *Magazine Stowage A.* The following shall be observed in the construction of a magazine required for "Magazine A" type of stowage:

(a) Magazines may be constructed of steel or wood.

(b) Magazines constructed of steel shall have the whole of the interior thoroughly protected by wood dunnage of a minimum thickness of ¾ inch. This lining may be installed during the progress of the stowage. Metal stanchions within the magazine shall be boxed with wood of a thickness of not less than ¾ inch. Bulkhead stiffeners or other structural members extending into the stowage spaces shall not be protected by dunnaging but shall be completely boarded over. When bare steel decks or tank tops are utilized to form the floor of a magazine, a wooden floor consisting of at least two layers of commercial 1-inch thick dunnaging shall be laid, the top course being laid crosswise to the lower course. When steel decks or tank tops are originally fitted with a wood flooring or are ceiled, it shall be necessary to fit one course of dunnage. All flooring formed by these methods shall be laid with commercial 1-inch lumber of widths not less than 4 inches, fitted as close as possible, edge to edge and butt to butt.

(c) Magazines constructed of wood shall have the bulkheads forming the sides and ends constructed of commercial 1-inch lumber, of ¾-inch tongue and groove sheathing, or of ¾-inch plywood, secured to uprights of at least a 3" x 4" size, spaced not more than 18 inches apart and secured at top, bottom and center with horizontal bracing. Uprights shall not be stepped directly onto a metal deck. A 2" x 4" bearer to carry the uprights shall be laid upon the metal deck. A 2" x 4" header shall be fitted against the underside of an overhead deck to receive the top of uprights. Top of uprights fitted against channel beams may be wedged directly to the beam with 2" x 4" spacers fitted between. Care shall be taken in securing upright framing that no nails penetrate to the interior of the magazine. When a magazine is constructed as a permanent compartment in the vessel, increased size and finish of lumber and other methods of fastening may be used provided such fastenings are recessed below the surface of the boarding to avoid projections within the interior of the magazine. All boardings shall be fitted and finished so as to form a smooth surface within the interior of the magazine. Construction shall be such as to separate all containers of explosives from contact with metal surfaces of the structure of the vessel. When a metal stanchion, post or other obstruction is located within the interior

area of the magazine, such obstruction must be completely covered with wood of a thickness of at least ¾ inch secured in place with nails or screws. When screws are used for fastening, the screw-heads shall be countersunk below the surface of the wood. The floor of the magazine shall conform to the provisions of paragraph (b) of this section. The door of the magazine shall be of substantial construction, fitted reasonably tight into its jamb. The door may be secured in place by the use of extension battens and wedges.

(d) A magazine constructed in accordance with the provisions of paragraphs (b) and (c) of this section, in which it is proposed to stow containers of explosives within 12 inches of the overdeck beams, or hatch coaming, shall have such deck beams and coaming sheathed with wood similar to that required for metal stanchions, posts or other obstructions by the provisions of paragraph (c) of this section.

(e) When a Class A magazine measures more than 40 feet in any direction, a partition bulkhead shall be fitted within the magazine as near half length as practicable, extending from the deck to at least the top of the stowage. Such partition bulkhead shall be constructed to the same scantlings as the sides of the magazine, except the boardings may be spaced not more than 6 inches apart alternately on both sides of the uprights. This bulkhead shall be constructed before loading commences and care shall be exercised that nail points do not protrude beyond the surface of the boarding.

(f) A magazine constructed in accordance with the provisions of paragraphs (b) and (c) of this section shall comply with the provisions of § 146.29–75 (c).

§ 146.29–83 *Ammunition stowage.* Military explosives that are authorized to be given ammunition stowage by the provisions of § 146.29–100 shall be stowed in a location selected in accordance with the provisions of § 146.29–75. Dunnage shall be laid over metal decks or tank tops, except that dunnage is not required when decks or tank tops are coated with mastic, magnesite, or other equivalent material, and when palletized units are used and the pallets are constructed of wood. Dunnaging shall be fitted to protect packages or articles or military explosives from damage. Nothing within this paragraph shall be construed as requiring the entire interior of the cargo compartment to be covered with dunnage.

§ 146.29–85 *Chemical ammunition stowage.* Chemical ammunition or chemical agents in bulk that are authorized to be given chemical ammunition stowage by the provisions of § 146.29–100 shall be stowed under the following conditions:

(a) Shall be afforded the same protection as required for ammunition stowage.

(b) Stowage shall preferably be in a deep tank or a lower hold.

(c) When stowed in a deep tank, pump suctions shall be effectively sealed off to prevent the escape of any leakage which may take place. Sealing off shall be accomplished by inserting a blank flange in way of the suction side of the bilge pump manifold.

(d) When stowed in a lower hold or other compartment, the hatch covers, ventilators and pump's suction shall be effectively sealed off to prevent the escape of any leakage which may take place. Sealing off the pump's suction shall be accomplished by inserting a blank flange in way of the suction side of the bilge pump manifold.

(e) When the quantity of chemical ammunition or chemical agents in bulk exceeds the capacity of deep tanks and lower holds, other holds may be used, preference being given to other lower holds or to a tween-deck hold directly over a lower hold in which such substances are stowed.

(f) Chemical ammunition or containers of chemical agents in bulk stowed in a tween-deck shall not be stowed within 8 feet of the side of the vessel.

(g) When the quantity of chemical ammunition to be stowed on board the vessel does not justify the use of a deep tank or lower hold, a suitable tween-deck space may be selected and the ammunition stowed in a portable magazine especially constructed to prevent any leakage from the ammunition escaping outside of the magazine. Such portable magazine shall be located at least 8 feet from the ship's side.

(h) Before entering a deep tank, lower hold or other compartment containing chemical ammunition the air inside the compartment must be tested by competent personnel to ascertain if leakage has taken place. If leakage has occurred, the operation of removing the ammunition or chemical agent shall be conducted by skilled personnel, preferably representatives of the appropriate Army Technical Service (Chemical Corps or Ordnance Corps) or Navy Department.

§ 146.29–87 *Special stowage.* Special stowage may be on deck protected from the elements, in a deck house, mast house, mast locker or in a vacant stateroom: *Provided,* That such a location conforms to the distance separation rule applicable to the item so stowed and adjacent military ammunition: *And provided further,* That the space is ventilated and does not contain any vessel stores or machinery or equipment used during the navigation of the vessel and can be closed off from traffic while at sea. Dunnage shall be fitted to protect packages from damage by contacting any metal parts of the ship.

§ 146.29–89 *Portable magazine stowage.* Military explosives authorized to be given portable magazine stowage by the provisions of § 146.29–100 shall be stowed under the following conditions:

(a) Shall be located in a hold or on deck in accordance with the provisions of § 146.29–100 for the particular class of military explosive stowed therein.

(b) Portable magazines shall be constructed watertight of wood, or of metal lined with wood ¾-inch minimum thickness, and not more than 100 cu. ft. +10% (gross) of explosives shall be stowed therein.

(c) All inner surfaces of the magazine shall be smooth and free of nails, screws, or other projections.

(d) When constructed of wood the scantlings shall not be less than those required for a type "A" magazine in § 146.29–79, and a strong, close fitting hinged cover or door with an effective means of securing shall be provided.

(e) When constructed of metal, the minimum thickness of the metal shall be not less than ⅛-inch sheet, or formed material.

(f) Ammunition or containers of ammunition or explosives in bulk when stowed in a portable magazine shall be so stowed and secured that no displacement can occur either upwardly or laterally.

(g) When stowed on deck the magazine shall be protected from the direct rays of the sun. Runners, bearers, skids, or other suitable means shall be provided to elevate it a minimum of 4 inches from the deck. Pad eyes, ring bolts, or other suitable means shall be provided for lashing the magazines and they shall be so lashed, chocked or braced as to prevent movement in any direction.

(h) Portable magazines shall carry the legend "Inflammable—Keep Lights and Fire Away", or "Flammable—Keep Lights and Fire Away."

§ 146.29–91 *Pyrotechnic stowage.* (a) Pyrotechnic ammunition shall be afforded ammunition stowage or special stowage in a location away from heat and so protected as to insure no moisture contacting the packages. This class of ammunition shall not be stowed in a hold or compartment with any other military explosives, except as permitted by the admixture charts (§ 146.29–99). Pyrotechnics shall not be overstowed with other cargo.

(b) For limited quantities of pyrotechnic ammunition an alternate stowage may be utilized consisting of stowing in metal lockers or portable magazines so located as to conform with the provisions of paragraph (a) of this section as regards other explosives, over-stowage, heat, and moisture.

§ 146.29–93 *Stowage of blasting caps, detonators, primer detonators, etc.* Stowage of Classes III, VI and VIII type ammunition shall conform to the provisions of §§ 146.29–99 and 146.29–100, and to the following requirements:

(a) Class VIII ammunition, when stowed on board the same vessel with Classes II, IV, V, or VII military explosives, shall be separated as follows:

(1) With a permanent steel deck or bulkhead intervening, the separation shall not be less than 10 feet in any direction.

(2) Without a permanent steel deck or bulkhead intervening, the separation shall not be less than 25 feet in any direction.

(b) Class VIII ammunition, when stowed on board the same vessel with Classes IX, X, or XI military explosives, shall be separated as follows:

(1) With a permanent steel deck or bulkhead intervening, the separation shall not be less than 25 feet in any direction.

(2) Without a permanent steel deck or bulkhead intervening, the separation shall be not less than 40 feet in any direction.

(c) Class VIII ammunition shall not be stowed within 8 feet of the vessel's side.

(d) When Class VIII ammunition is stowed over tween-deck hatch covers, and military explosives are stowed in a hold below, a single layer of commercial 2-inch lumber is required over the tween-deck hatch cover to form the floor of the magazine. Under these conditions, wooden hatch covers may be considered an integral part of the permanent steel deck and the separation requirements of paragraphs (a) (1) and (b) (1) of this section shall apply.

(e) When Class III or VI ammunition is stowed with Class VIII ammunition the provisions governing the stowage and separations of Class VIII shall apply.

(f) When a portable magazine is used for detonator stowage, such magazine may be stowed in the square of a weather deck hatch.

(g) Upon approval by the Captain of the Port, a portable magazine containing Class VIII ammunition may be stowed in an isolated cabin or steel deck house secure from aircraft machine-gun fire and not subject to casual contact by persons on board the vessel.

§ 146.29–95 *Ventilation of magazine.* A magazine that is not fitted with ventilating ducts to the atmosphere shall be ventilated by omitting the top course of boarding on the sides of the magazine to provide a clear space at least 1 inch and not more than 6 inches below the lower flange or toe of the deck beam within the compartment or hold in which the magazine is constructed. Ventilators of systems feeding directly into a magazine or a hold in which military explosives are stowed shall be covered with a double layer of wire screen of not less than ⅛-inch mesh at the weather end of the cowl. This screen shall be attached securely in place in such a manner as to insure a positive closure.

§ 146.29–97 *Statements of characteristic properties and hazards.* (a) In § 146.29–100 there are statements in italics setting forth certain characteristics and hazards of the substances or articles listed therein. It is not intended, nor shall it be assumed, that these statements set forth all of the characteristic properties or hazards of the particular substance or article and such statements as are shown are informative only.

(b) For the purpose of the regulations in this subpart Army Class XII explosives are treated as follows:

(1) Ammonium nitrate is classified as an oxidizing material.

(2) Dinitrotoluene (DNT) is classified as a high explosive Class IX.

(3) Wet nitrocellulose wet with 20 percent of water is classified as a flammable solid.

(4) Wet nitrocellulose wet with 30 percent of alcohol or flammable solvent is classified as a flammable liquid.

§ 146.29–99 *Explosives admixture charts.* (a) Chart A of this section indicates the compatibility of the various classes of ammunition described in § 146.29–100. Chart B of this section indicates the compatibility within the class of items of Classes XI–C and XI–D.

(b) A shaded block at an intersection of horizontal and vertical columns in Chart A indicates that the particular class of military explosives shown by the heading of the horizontal column to the left must NOT be stowed in the same hold or compartment with the particular class of military explosives indicated by the heading of the vertical column at the top of the chart. A shaded block at the intersection of horizontal and vertical columns in Chart B indicates that that particular item shown by the heading of the horizontal column to the left must NOT be stowed "On deck" together unless separated by the superstructure, or in the same hold or compartment with the item indicated by the heading of the vertical column at the top of the chart. For specific provisions of stowage, and items included in each class, refer to § 146.29–100.

(c) In the charts the letters refer to the following notes:

NOTE A: Class II–F may be stowed in the same lower hold or tween-deck hold with Classes II–C, II–E, II–G, and III provided the Class II–F ammunition is bottom stowed and provided further that no other class of explosive or ammunition is stowed in the hold or tank below.

NOTE B: Class II–F may be stowed in the same deep tank, lower hold or tween-deck hold with Classes IV–A, IV–B, V, VII: *Provided,* That the Class II–F ammunition is bottom stowed: *And provided further,* That no other class of explosives or ammunition is stowed in the hold or tank below.

NOTE C: Propellant charges Class II–B for separate loading artillery shell filled with Class XI–A or XI–B chemical may be stowed together in the same hold or compartment: *Provided,* That the propellant charges are "top stowed", the two items being separated by a type "A" dunnage floor. When so stowed the propellant charges shall not be overstowed with any other cargo.

NOTE D: Class II–J TH incendiary filled ammunition shall be stowed only in a deep tank or lower hold, and in all cases, bottom stowed, except that a limited quantity shipment not in excess of 500 lbs. net TH content may be stowed on deck in a special magazine constructed of material as set forth in § 146.29–81 (c) and provided such magazine has an insulation of sand at least 1 foot thick on the bottom. This magazine shall be so mounted that there is at least 1 foot void between its bottom and the deck on which it is mounted, and its preferred location is aft. There shall be one charged fire hose in the immediate vicinity of this magazine when this class ammunition is stowed therein. There shall be only one such stowage per vessel and that stowage shall not be over living quarters or hatches in which military explosives, other dangerous articles, or ship's stores are stowed below.

NOTE E: Class V (unfuzed and no fuzes packed in container) and Class VII (unfuzed and no fuzes packed in container) may be stowed with Class X–A.

NOTE F: See Chart B for compatibility of items within this class.

NOTE G: May be stowed together if separate stowage is not available.

CHART A—COMPATIBILITY CHART FOR VARIOUS CLASSES OF EXPLOSIVES

● Shall NOT be stowed together □ May be stowed together A Check note for proper stowage

I. C. C. class		Class	I	II-A	II-B	II-C	II-D	II-E	II-F	II-G	II-H	II-J	III	IV-A	IV-B	V	VI	VII	VIII	IX-A	IX-B	IX-C	X-A	X-B	X-C	X-D	X-E	XI-A	XI-B	XI-C	XI-D	Class
C	Small-arms ammunition w/o explosive bullets, mechanical time fuze w/o booster and like items	I	□	□	□	□	□	□	□	□	●	D	□	□	□	□	□	□	□	□	□	□	●	●	●	●	□	□	●	●	I
A or B	Bulk propellants, such as ballistite, cordite, FNH, NH, and NC powder	II-A	□	□	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	●	●	●	●	●	●	●	●	●	●	●	II-A
B	Smokeless powder propellants, "Made-up bag charges" in outside shipping containers	II-B	□	□	□	●	●	●	●	●	●	●	□	□	□	□	●	□	●	□	●	●	●	●	●	●	●	C	C	●	●	II-B
B or C	Pyrotechnics (fireworks)	II-C	□	●	●	□	●	□	A	●	●	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	II-C
Var.	Chemical ammunition—WP or PWP filled (solid)	II-D	□	●	●	□	□	□	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	II-D
Var.	Chemical ammunition—HC filled (solid)	II-E	□	●	●	□	□	□	A	□	●	●	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	II-E
Var.	Chemical ammunition—FS or FM filled smoke (liquid)	II-F	□	●	●	A	●	A	□	A	●	●	A	B	B	B	●	B	●	●	●	●	●	●	●	●	●	□	□	●	●	II-F
Var.	Chemical ammunition—IM, NP, or PT filled, incendiary composition (oil gel)	II-G	□	●	●	●	●	□	A	□	●	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	□	●	●	II-G
None	Chemical ammunition—water activated	II-H	●	●	●	●	●	●	●	●	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	II-H
Var.	Chemical ammunition—TH filled incendiary composition (solid)	II-J	D	●	●	D	●	●	●	D	●	□	●	D	D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	II-J
B or C	Fuzes, PD w/o booster; fuzes AT mine (nonchemical) w/o booster; fuzes, bomb tail w/o booster; fuzes, tracer; primers; primer detonators, etc	III	□	●	●	●	●	□	A	●	●	●	□	□	□	□	●	□	●	●	●	●	●	●	●	●	●	●	●	●	●	III
B	Fixed ammunition w/o explosive projectiles (shell) and like items	IV-A	□	●	□	●	●	●	B	●	●	D	□	□	□	□	□	□	●	●	●	●	●	●	□	●	●	□	●	●	●	IV-A
A	Fixed and semifixed ammunition with explosive loaded projectile (shell)	IV-B	□	●	□	●	●	●	B	●	●	D	□	□	□	□	□	□	●	●	●	●	●	●	□	●	●	□	●	●	●	IV-B
A	Separate loading shells filled with explosive "D"	V	□	●	□	●	●	●	B	●	●	●	□	□	□	□	□	□	●	●	●	●	E	●	●	●	●	□	●	●	●	V
A	BD fuzes; PD fuzes with booster; bomb fuzes with booster; rocket fuzes with booster; and like items	VI	□	●	●	●	●	●	●	●	●	●	□	□	□	□	□	●	□	●	●	●	●	●	●	●	●	●	●	●	●	VI
A	Separate loading shells filled with HE other than explosive "D"	VII	□	●	□	●	●	●	B	●	●	●	□	□	□	□	□	●	□	●	●	□	●	E	●	□	●	●	□	●	●	VII
A or C	Blasting caps; detonators; AT mine fuzes (chemical); etc	VIII	□	●	●	●	●	●	●	●	●	●	□	●	●	□	●	□	●	●	●	●	●	●	●	●	●	●	●	●	●	VIII
A or B	Explosives in bulk, such as black powder, smokeless powder for small arms, etc	IX-A	□	□	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	●	●	●	●	●	●	●	●	●	●	●	IX-A
A	High explosives, such as dynamite, TNT, demolition blocks, etc	IX-B	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	●	□	●	●	●	●	●	●	●	●	●	IX-B
A	Initiating and priming explosives in bulk	IX-C	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	●	●	●	●	●	●	●	●	●	●	●	IX-C
A	Explosive bombs, mines, torpedoes, etc	X-A	□	●	●	●	●	●	●	●	●	●	●	●	●	E	●	E	●	□	●	□	□	●	●	●	●	●	●	●	●	X-A
A	Explosive bombs, mines, etc. packed with fuze in integral package	X-B	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	X-B
A	Guided missiles with solid propellant motors, HE warhead	X-C	●	●	●	●	●	●	●	●	●	●	□	□	●	□	●	□	●	●	●	●	●	●	□	●	●	●	●	●	●	X-C
A	Guided missiles with liquid propellant motors, HE warhead	X-D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	●	●	●	●	●	X-D
A	Guided missiles with liquid auxiliary power units, solid propellant motors, HE warhead	X-E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	●	●	●	●	X-E
A or Pois. A	Chemical ammunition—lethal	XI-A	□	●	C	●	●	●	□	□	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	□	□	●	●	XI-A
A or Pois. C	Chemical ammunition—nonlethal	XI-B	□	●	C	●	●	●	□	□	●	●	●	□	□	□	●	□	●	●	●	●	●	●	●	●	●	□	□	●	●	XI-B
Var.	Fuels in containers for missile and rocket engines	XI-C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	F	●	XI-C
Var.	Oxidizers in containers for missile and rocket engines	XI-D	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	F	XI-D

CHART B—COMPATABILITY CHART FOR VARIOUS ITEMS WITHIN CLASS XI-C AND CLASS XI-D

Legend: ●● Shall NOT be stowed together □□ May be stowed together G Check note for proper stowage

	Nomenclature	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa	
a	Acids; i. e., nitric sulfuric; fuming red nitric; fuming white nitric; etc	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	a
b	Liquid hydrogen	●●	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	b
c	Liquid fluorine	●●	●●	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	c
d	Liquid oxygen	●●	●●	●●	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	d
e	Liquid nitrogen tetroxide	●●	●●	●●	●●	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	e
f	Anhydrous ammonia	●●	●●	●●	●●	●●	□□	●●	●●	●●	●●	●●	□□	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	f
g	Diborane; pentaborane	●●	●●	●●	●●	●●	□□	□□	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	g
h	Aluminum borohydrides	●●	●●	●●	●●	●●	□□	□□	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	h
i	Diethylene glycol dinitrate, liquid	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	i
j	Nitroglycerine, liquid	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	j
k	Hydrogen peroxide	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	k
l	Hydrazine; hydrazine hydrate	●●	●●	●●	●●	●●	□□	●●	●●	●●	●●	●●	□□	□□	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	l
m	Dimethyl hydrazine, unsymmetrical	●●	●●	●●	●●	●●	□□	●●	●●	●●	●●	●●	□□	□□	●●	G	G	G	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	m
n	Alcohol-ethyl, methyl, furfuryl	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	G	□□	G	G	G	●●	G	G	●●	●●	●●	●●	●●	n
o	Gasoline (AVGAS)	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	G	□□	□□	G	G	G	●●	G	G	●●	●●	●●	●●	●●	o
p	Heptane; kerosene; octane	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	□□	□□	□□	G	G	G	●●	G	G	●●	●●	●●	●●	●●	p
q	Pentane	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	G	G	G	□□	□□	□□	●●	□□	□□	●●	●●	●●	●●	●●	q
r	Analine	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	G	G	□□	□□	□□	●●	□□	□□	●●	●●	●●	●●	●●	r
s	Monoethylaniline	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	G	G	□□	□□	□□	●●	□□	□□	●●	●●	●●	●●	●●	s
t	Nitromethane, tetranitromethane	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	●●	●●	●●	●●	●●	●●	●●	t
u	Diethylene triamine	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	G	G	□□	□□	□□	●●	□□	□□	●●	●●	●●	●●	●●	u
v	Acetonitrile (methyl cyanide)	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	G	G	G	□□	□□	□□	●●	□□	□□	●●	●●	●●	●●	●●	v
w	Potassium cuprocyanide	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	●●	●●	●●	●●	w
x	Sodium pemanganate, solid	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	□□	●●	●●	x
y	Calcium permanganate, solid	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	□□	□□	●●	●●	y
z	Lithium, metallic	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	●●	z
aa	Metals, powdered	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	□□	aa

§ 146.29–100 *Classification, handling and stowage chart*

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
I						
Small-arms ammunition w/o explosive bullets mechanical time fuze w/o booster and like items.	Small-arms ammunition is a variety of fixed ammunition and includes blank ammunition and shotgun shells designed to be fired from a pistol, revolver, rifle, shotgun, or similar weapon held by the hand, or by the hand and shoulder, or machine guns of caliber less than .75, or blank remover cartridges for pilot seat ejectors and canopy removing catapults, and consists of a metallic or paper cartridge case, a primer and a propelling charge, with or without bullet, shot, tear-gas material, tracer components or incendiary compositions or mixtures, but not including bullets loaded with high explosives. (For small arms ammunition with explosive bullets or projectiles see Class IV–B.) Other items of ammunition or component parts of ammunition having similar hazard characteristics to small-arms ammunition are also included in this class. Includes but is not limited to: Cartridges: Aircraft engine starter. Armor piercing. Armor piercing incendiary. Armor piercing incendiary tracer. Ball. Blank. Carbine. Catapult, aircraft ejection seat. Exactor. High pressure test. Ignition. Incendiary. Initiator. Powder actuated tool, shipped separately. Remover, aircraft canopy. Rifle grenade. Slick marker (MK1). Tear gas. Thruster. Tracer. Catapult w/cartridge: Aircraft ejection seat. Chemical delay pencil. Detonating cord. Empty cartridge case, primed. Firing device w/o detonator. Fuse, blasting cap. Grenade projection adapter and similar inert devices when packed with blank small-arms cartridge. Grenades, empty primed. Igniter, torpedo. Mechanical time fuze w/o booster. Powder actuated tool w/cartridge packed in the same outside box. Primer, lock combination. Primer, lock electric. Primer, small-arms. Primers, percussion cap (such as used in small-arms ammunition). Remover w/cartridge, aircraft canopy, M1. Shell, shotgun. Small-arms ammunition w/o explosive bullets. T cutter (MK2). NOTE: The U. S. Army and Navy definitions of small-arms is based on tactical considerations. The Coast Guard definition shall take precedence in all cases involving transportation, handling, and stowage as cargo on board merchant vessels which are subject to the regulations in this part. Small arms ammunition without explosive bullets does not require a permit. See § 146.29–13 and § 146.29–15.	"Cannon primers" "Combination primers." "Cordeau detonant." "Empty cartridge case, primed." "Explosive cable cutters." "Explosive rivets" "Fuse lighters" "Grenades, empty, primed." "Igniter." "Percussion caps." "Percussion fuze." "Safety fuse." "Small-arms ammunition." "Small-arms ammunition, tear gas cartridge." "Small-arms primers." "Time fuze (mechanical w/o booster)."	C C C C O C C C O C C C C O C C	The principal hazard in connection with the stowage of this class of ammunition is its involvement in fire from outside source. Under such conditions the presence of this type of ammunition will not contribute excessively to the fire. Fire may be controlled and extinguished by flooding or spraying with large amounts of water. Missiles from burning ammunition will not be projected with any considerable velocity. Fire fighting personnel should take normal precautions and not expose themselves unnecessarily.	Any compartment or hold. May be stowed in any hold above, any hold below, or a hold adjacent to one in which flammable liquids, flammable solids or oxidizing materials, flammable compressed gases, hazardous articles or combustible liquids are stowed. Provisions of § 146.29–59 (Stowage adjacent to other dangerous articles) shall be complied with unless specifically exempted by the above paragraph. May be overstowed.	1. Observe marking on package to be certain that no small-arms ammunition with explosive bullets is included. 2. Do not subject packages to rough handling. 3. Maximum weight per draft shall not exceed 3,000 lbs. plus 10%. 4. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 5. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 6. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

...ling and stowage chart—Continued

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II–A Bulk propellants such as: Ballistite, Cordite, FNH, NH, and NC powders.	Smokeless powder for cannon in bulk. Rocket propellants in bulk. Includes but is not limited to: Ballistite (bulk) for any purpose in large grains, sheets, or masses. Cordite. FNH powder. NC powder (SPD). NH powder (SPDN). SPCA powder. SPCG powder.	"Propellant explosives, Class A." "Propellant explosives, Class B."	A B	Loose powder may be ignited by spark, friction, or intense heat. Powder dust is especially hazardous. Burns rapidly with excessive heat. Burning powder in ships hold may explode, producing structural damage and missiles. May become unsafe if subjected to high temperatures. If involved in a fire, immediately apply water freely and in quantity.	*Ammunition stowage* Shall not be overstowed with any other kind of cargo except bomb fin assemblies, empty water fillable practice bombs and empty auxiliary gas tanks. When Class I ammunition is stowed in the same hold or magazine with this Class the two stowages must be separated by a partition bulkhead or type "A" dunnage floor. For stowage adjacent to other dangerous articles see § 146.29–59. Shall not be loaded at an ammunition loading pier.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Packages shall be handled in such a manner as to insure that no spark or friction will occur. 4. Observe packages or containers for evidence of sifting or inability to retain contents and reject any showing such signs. 5. In event a package is damaged and powder is spilled, immediately stop operations and sweep up any loose powder. 6. Remove damaged container and residue of powder to a safe location. 7. Gravity roller conveyor shall not be used unless authorized by the Captain of the Port in ports or facilities under his jurisdiction. At other ports or facilities authority for such use may be granted by the Officer in Charge. 8. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 9. Cargo nets w/o trays, skipboards, pallets, or pieplates are not permitted. 10. The maximum permitted weight per draft when handled by pallet, skipboard, tray, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.
II–B Smokeless powder propellants. "Made-up bag charges" in outside shipping containers.	Smokeless powder propellant charges (made-up charges) in cloth powder bags with igniter attached and with or without its primer and packed in outside metal or fiberpack containers. Includes but is not limited to: Cartridge starter, jet engine. Charge, propelling for rod, earth blast driven. Propellant charges for separate loading ammunition such as: 6", 8", 12", 14", 16", 155mm, 240mm, 280mm.	"Propellant explosives, Class B." "Starter cartridge, jet engine."	B B	Loose powder may be ignited by spark friction, or intense heat. Powder dust is especially hazardous. Burns rapidly with excessive heat. Burning powder in ship's hold may explode producing structural damage and missiles. May become unsafe if subjected to high temperatures. If involved in a fire, immediately apply water freely and in quantity.	*Ammunition stowage* Shall not be overstowed with any other kind of cargo except bomb-fin assemblies, empty water fillable practice bombs and empty auxiliary gas tanks. When Class I ammunition is stowed in the same hold or magazine with this class the two stowages must be separated by a partition bulkhead of type "A" dunnage floor. Propellant charges, of this class, for separate loading artillery shell, filled with Class XI–A or XI–B chemical may be stowed together in the same hold or compartment provided the propellant charges are "top-stowed," the two items being separated by a type "A" dunnage floor. When so stowed the propellant charges shall not be overstowed with any other cargo. For stowage adjacent to other dangerous articles see section 146.29–59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Packages shall be handled in such a manner as to insure that no spark or friction will occur. 4. Observe packages or containers for evidence of sifting or inability to retain contents and reject any showing such signs. 5. In event a package is damaged and powder is spilled, immediately stop operations and sweep up any loose powder. 6. Remove damaged container and residue of powder to a safe location. 7. Gravity roller conveyors shall not be used unless authorized by the Captain of the Port in ports or facilities under his jurisdiction. At other ports or facilities authority for such use may be granted by the Officer in Charge. 8. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 9. Cargo nets w/o trays, skipboards, pallets, or pieplates are not permitted. 10. The maximum permitted weight per draft when handled by pallet, skipboard, tray, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II-C						
Pyrotechnics (fireworks).	Fireworks are all manufactured articles designed primarily for the purpose of producing visible or audible pyrotechnic effects by combustion or explosion. Includes but is not limited to: Blue sump. Bomb, target identification. Cartridge igniter, turbo jet engine. Delay electric igniters. Depth charge markers, day. Destroyer, document, No. 3. Firecrackers, except M80. Fire starter. Fireworks—bombs. Fireworks—shell. Flares of all types, such as: Aircraft. Airport. Bombardment. Float. High altitude parachute. Parachute. Parachute trip. Tow target. Trip. Flash cartridge 72 grains or under. Flash reducer (non black powder). Flash sheets (ltd. packing, ICC). Float lights. Fuse igniters. Fuse lighters. Fusee, warning, railroad. Igniters, M1 and M2. Illuminating grenades. Metal powders (ltd. packing ICC). Photographic flash powder (ltd. packing ICC). Pull wire fuse lighter. Pyrotechnic mixture, 72 grains or under. Quick match. Roman candles. Salutes. Signals: Aircraft float light. Day distress aircraft. Distress hand smoke. Double star. Drift day (bronze powder, inert). Drift night (red phosphorous). Emergency identification: smoke, star submarine. Ground cluster. Ground high burst ranging. Ground parachute smoke. Ground parachute star. Highway. Miniature practice bomb. Pistol rocket: Comet shower, smoke star. Single star. Submarine float. Simulator: Boobytrap, flash, illuminating, whistling, 72 grains or under. Hand grenade, M116. Smoke pots w/o oil. Squibs of all kinds. Tear gas pot fuse. Torpedo signalling, railway. Tracers. Very signal lights.	"Common fireworks." "Electric squibs" "Fuse igniters" "Fuse lighters" "Igniter" "Railway fusee" "Railway torpedoes" "Safety squibs" "Special fireworks"	C C C C C C B C B	The principal hazard is involvement in a fire. Some pyrotechnics may ignite spontaneously if exposed to moisture or high temperatures, but under these conditions most types tend to become less sensitive and more difficult to ignite. Aircraft flares and high burst ranging ground signals involved in a fire may explode. Most other types burn with intense heat and without serious explosion. If involved in a fire immediately apply water freely and in quantity. Steam or fog is also effective but less so than water. Fire fighting personnel should work from behind barriers and not expose themselves unnecessarily.	*Ammunition stowage, deep tank stowage or pyrotechnic locker* Shall be stowed away from heat and in a dry location, protected against moisture contacting the stowage. Shall not be overstowed with any other kind of cargo May be stowed in the same deep tank, lower hold or tween-deck hold with II-F provided the Class II-F ammunition is bottom stowed and provided that no other class of explosives or ammunition is stowed in the hold below such stowage. May be stowed in the same deep tank or lower hold as Class II-J provided the II-J ammunition is bottom stowed. For stowage adjacent to other dangerous articles see § 146.29-59.	1. Handle by hand or mechanical means. 2. Do not drag, drop, tumble, walk or otherwise subject packages to shock. 3. Do not load during excessive rainy weather, unless complete protection against moisture coming in contact with the package is provided. 4. Do not use chute in loading or unloading. 5. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 6. Cargo nets without trays, skipboards, pallets, or pieplates are not permitted. 7. Packages or containers shall be stowed in the position indicated by their marking. 8. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 9. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 10. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 11. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II–D						
Chemical ammunition. WP or PWP filled (solid).	All chemical ammunition, including fixed, semi-fixed and separate loading, filled with WP or PWP (white phosphorus) when assembled or packed with or w/o their ignition elements, bursting charges, fuzes or propellants. WP or PWP shipped in bulk in drums, barrels, or other authorized shipping containers shall be classified as a flammable solid. WP or PWP when shipped in authorized ICC specification containers or Chemical Corps specification containers of integrity equal to ICC containers (including projectiles, bombs, and rocket heads, w/o ignition elements, bursting charges or fuzes), may be handled and stowed either as a flammable solid or as chemical ammunition Class II–D. Includes but is not limited to: Bombs, aircraft, WP or PWP filled. British Calling Cards. Fire leaves. Grenades, hand, WP or PWP filled. Grenades, rifle, WP or PWP filled. Igniters, phosphorus filled. Projectiles (shells) WP or PWP filled packed w/ or w/o propellants. Rockets Heads, WP or PWP filled. Rockets, assembled w/motors, WP or PWP filled. NOTE: The U. S. Army and Navy, when shipping ammunition filled with white phosphorus, mark such ammunition and the containers thereof with the word "smoke" and the symbol WP or PWP. The ammunition is also marked with one yellow band.	"Ammunition for cannon with explosive projectile." "Ammunition for cannon with smoke projectile." "Explosive bomb" "Explosive projectile." "Igniter" "Special fireworks" Shipping name of item when shipped as flammable solid.	A A A A C B F. S.	The principal characteristic of white phosphorus is that of spontaneously igniting upon exposure to air, burning with an intensely hot flame, and giving off large volumes of white smoke. The fumes are highly discomforting. Burning phosphorus gives off phosphorus oxide which is toxic upon sustained exposure thereto. Phosphorus is intensely poisonous when taken internally. It becomes liquid at 111° F. Leakage which sometimes occurs, usually gives warning by smoke. Ammunition fitted with fuzes and boosters, if involved in a fire will usually explode with moderate violence thus tending to spread the fire rapidly. Apply water freely and in quantity to control spread of fire. Steam or fog is also effective but less so than water. It is necessary to keep the loose WP or PWP completely covered with water to prevent reignition. Organic material contaminated with WP or PWP such as dunnage in the holds of vessels, must be removed and disposed of by burning. Otherwise after drying out, these substances are likely to reignite. Rockets, WP filled, assembled with motor and involved in a fire will present an additional hazard due to the propulsive nature of the rocket. Loose phosphorus in contact with skin tissue will adhere causing painful burns and continue to consume skin tissue until removed. A solution of copper sulphate is effective in counteracting this action. Use rubber protective gloves, boots, aprons, and gas masks to provide effective protection.	*Ammunition stowage, chemical ammunition stowage, or deep tank stowage.* It is important to stow in locations not subject to temperatures above 100° F. When shipments of Army ammunition cannot be so stowed the following shall be complied with: WP or PWP filled items of ammunition shall be stowed in a nose up position unless other requirements are specified by the Army. The position of the nose end of the item of ammunition is marked on the outside package or container. Drums or other authorized ICC or Chemical Corps specification containers filled with WP or PWP may be stowed in the same hold or compartment with chemical ammunition Class II–D. For stowage adjacent to other dangerous articles see § 146.29–59. When given chemical ammunition stowage, see § 146.29–85 for additional requirements.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Observe packages or projectiles (shells) for leakage and reject any showing such signs. 5. Packages or containers shall be stowed in the position indicated by their marking. 6. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 7. Cargo nets w/o trays, skipboards, pallets, or pieplates are not permitted. 8. The maximum permitted weight per draft when handled by pallet, skipboard, tray, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 9. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 10. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 11. Wire rope slings are permitted when handling unboxed bombs or containers filled with WP or PWP. (See table Limiting Loads, Class X–A.) 12. Drums of WP or PWP shall not be handled by attaching hooks to the chime of the drums. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II-E						
Chemical ammunition, HC filled (solid).	All chemical ammunition including fixed, semi-fixed and separate loading, filled with HC (Hexachlorethane, a smoke mixture) when assembled or packed w/ or w/o their ignition elements, bursting charges, ejection charges, fuzes or propellants. HC mixture shipped in bulk in drums, barrels or other authorized shipping containers shall be classified as an oxidizing material. HC mixture when shipped in authorized ICC specification containers or Chemical Corps specification containers of integrity equal to ICC containers (including shells and bombs w/o ignition elements, bursting charges or fuzes) may be handled and stowed either as an oxidizing material or as chemical ammunition Class II-E. Includes but is not limited to: Bombs, aircraft, smoke, HC filled. Bombs, floating, smoke, HC filled. Bombs, smoke identification, HC filled. Float, smoke, HC filled. Grenades, hand, HC filled. Grenades, signal, HC filled. Grenades, colored smoke, HC filled. Pots, smoke, HC filled. Shells, artillery, smoke, HC filled. Shells, mortar, smoke, HC filled. NOTE: The U. S. Army and Navy, when shipping ammunition filled with HC smoke or colored smoke, mark such ammunition HC smoke or colored smoke and mark the ammunition with one yellow band.	"Ammunition for cannon with smoke projectile." "Explosive bomb" "Explosive projectile." "Special fireworks" Shipping name of item when shipped as oxidizing material.	A A A B Oxy. M.	HC (hexachlorethane mixture) is subject to spontaneous ignition through the action of moisture on the HC mixture. Once started, the temperature rises quickly and may be sufficient to cause adjacent containers of HC to ignite. The reaction once started is self-supporting and requires no oxygen. Water can be applied freely to prevent spread of fire. The use of Foamite, CO_2 or fog is less effective. Personnel fighting fire involving HC articles of ammunition especially when stowed in the hold of a vessel, should avoid working in dense smoke if not wearing rescue breathing apparatus or gas masks. As there will probably be an oxygen deficiency in dense smoke, self-contained breathing apparatus should always be used in preference to gas masks.	*Ammunition stowage, chemical ammunition stowage, or deep tank stowage* It is important to stow in locations not subject to temperatures above 100° F. and protected from moisture. Stowage shall be accessible from cargo hatch or other access means to the hold or compartment. Drums or other authorized ICC or Chemical Corps specification containers filled with HC may be stowed in the same hold or compartment with chemical ammunition Class II-E. May be stowed in the same deep tank, lower hold or tween-deck hold with Class II-F provided the Class II-F ammunition is bottom stowed and provided further that no other class of military explosives is stowed in the hold or tank below. For stowage adjacent to other dangerous articles see § 146.29-59. When given chemical ammunition stowage, see § 146.29-85 for additional requirements.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Observe packages or projectiles (shells) for leakage and reject any showing such signs. 5. Packages or containers shall be stowed in the position indicated by their markings. 6. Cargo handling stevedore gear may be trays, skipboards, pallets or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 7. Cargo nets w/o trays, skipboards, pallets, or pieplates are not permitted. 8. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 9. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 10. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 11. Wire rope slings are permitted when handling unboxed bombs or containers filled with HC mixture. (See table of Limiting Loads, Class X-A.) 12. Drums of HC mixture shall not be handled by attaching hooks to the chime of the drums. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II–F						
Chemical ammunition. FS or FM smoke filled (liquid).	All chemical ammunition including fixed, semi-fixed and separate loading filled with smoke, FS (sulfur trioxide in chlorsulfonic acid) or FM (titanium tetrachloride) when assembled or packed with or w/o their bursting charges, fuzes, or propellants. FS or FM shipped in drums, barrels, cylinders or other authorized containers shall be classified as a corrosive liquid. FS or FM when shipped in authorized ICC specification containers or Chemical Corps specification containers of integrity equal to ICC containers (including shells, rocket heads, w/o bursting charges or fuzes) may be handled and stowed either as corrosive liquid or as a chemical ammunition Class II–F. Includes but is not limited to: Grenades, frangible, smoke FS or FM filled. Grenades, smoke, FS or FM filled. Rockets, FS or FM filled. Shell, artillery, FS or FM filled. Shell, mortar, FS or FM filled. Spotting charges, FS filled. NOTE: The U. S. Army and Navy, when shipping ammunition filled with FS or FM smoke, mark such ammunition and the containers thereof with the word "Smoke" and the symbol FS or FM. The ammunition is also marked with one yellow band.	"Ammunition for cannon with smoke projectile." "Explosive projectile." "Rocket ammunition with smoke projectile." Shipping name of item when shipped as corrosive liquid.	A A A Cor. L.	FS (sulfur trioxide in chlorsulfonic acid) and FM (titanium tetrachloride) are liquids which fume badly when hot. They react violently with small amounts of water and form a dense white smoke upon release to the atmosphere. FS is highly corrosive both as a liquid and as a smoke. FM is corrosive in liquid only, but its smoke is very irritating. Leakage of FS or FM should be washed off immediately with large volumes of water. Personnel working in a confined space where high concentrations of FS or FM smoke exists should use rubber protective gloves, boots, aprons and gas masks for effective protection.	*Ammunition stowage, chemical ammunition stowage, or deep tank stowage* It is important to stow away from heat and to protect from moisture. May be stowed in the same deep tank, lower hold or tween-deck hold with Classes II–C, II–E, II–G, and III provided the Class II–F ammunition is bottom stowed and provided further that no other class of explosives or ammunition is stowed in the hold or tank below. May be stowed in the same deep tank, lower hold or tween-deck hold with Classes IV–A, IV–B, V, and VII provided the Class II–F ammunition is bottom stowed and provided further that no other class of explosives or ammunition is stowed in the hold or tank below. Drums or other authorized ICC or Chemical Corps specification containers filled with FS or FM may be stowed in the same hold or compartment with chemical ammunition Class II–F. Shall not be stowed over other types of ammunition. For stowage adjacent to other dangerous articles see § 146.29–59. When given chemical ammunition stowage, see § 146.29–85 for additional requirements.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Observe packages or projectiles (shells) for leakage and reject any showing such signs. 4. Containers or projectiles shall be stowed in the position indicated by their marking. 5. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 6. Cargo nets w/o trays, skipboards, pallets, or pieplates are not permitted. 7. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 8. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 9. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 10. Drums of FS or FM shall not be handled by hooks attached to the chime of the drums. 11. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II–G						
Chemical ammunition. Incendiary composition, IM, PT or NP filled (oil gel).	Chemical ammunition filled with IM, PT or NP (thickened fuels) when assembled or packed with or w/o ignition elements, bursting charges or fuzes. IM, PT or NP shipped in drums, barrels or other authorized shipping containers shall be classified as a flammable solid. IM, PT or NP when shipped in authorized ICC specification containers or Chemical Corps specification containers of integrity equal to ICC containers (including bombs w/o ignition elements, bursting charges or fuzes) may be handled and stowed either as a flammable solid or as chemical ammunition Class II–G. Includes but is not limited to: Bombs. Bombs, cluster incendiary. Frangible grenades. NOTE: The U. S. Army and Navy, when shipping ammunition filled with these incendiary compositions, mark such ammunition or containers thereof with the Chemical Corps symbol of the filler and one purple band.	"Explosive bomb".. "Grenade, hand".... "Special fireworks".. Shipping name of item when shipped as flammable solid.	A A B F. S.	The principal hazard of IM, PT or NP filled items is involvement in a fire. They burn rapidly with intense heat. Extinguishment of fires is best accomplished by means of water fog. Fog foam or a foam steam (mechanical or chemical) is likewise effective. CO_2 should not be used unless the fire is small and in its incipient stage. In holds of a vessel large volumes of water are recommended as a cooling agent provided such may be employed without "floating off" burning gel. The vapors from heated napalm are toxic and rescue breathing apparatus should be worn while working in noticeable concentrations. Clusters of incendiary bombs in this category may contain a certain percentage of bombs having a high explosive charge capable of causing fragments which could be dangerous to fire-fighting personnel. Incendiaries of this type may contain ignition components of WP adding an additional hazard.	*Ammunition stowage, chemical ammunition stowage, or deep tank stowage* Shall not be stowed within 10 feet of a heat bulkhead. May be stowed in the same deep tank, lower hold or tween deck hold with Class II–F provided the Class II–F ammunition is bottom stowed and provided further that no other class of explosives or ammunition is stowed in the hold or tank below. May be stowed in a deep tank or lower hold with Class II–J incendiary ammunition provided the Class II–J is bottom stowed. For stowage adjacent to other dangerous articles, see § 146.29–59. When given chemical ammunition stowage, see § 146.29–85 for additional requirements.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages, containers or bombs to shock. 3. Do not use chute in loading or unloading. 4. Observe packages, containers or bombs for failure or inability to retain contents and reject any showing such signs. 5. Packages, or containers shall be stowed in the position indicated by their marking. 6. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 7. Cargo nets w/o trays, skipboards, pallets or pieplates are not permitted. 8. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 9. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 10. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 11. Wire rope slings are permitted when handling unboxed bombs or containers filled with IM, PT or NP. (See table of Limiting Loads, Class X–A.). 12. Drums of IM, PT, or NP shall not be handled by attaching hooks to the chime of the drums. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.
II–H						
Chemical ammunition. Water activated.	Chemical ammunition filled with sodium, calcium carbide, calcium phosphide, lithium hydride, with or w/o explosive components. Includes but is not limited to: Beacons, NEA. Can, false target. Depth charge markers, night. Grenades, sodium filled. Igniters, sodium filled. Pots, torpedo torch. Shell, false target.	There are no provisions in the current ICC regulations for the marking of this class of ammunition.	----------	On contact with moisture, metallic sodium or lithium hydride will liberate large quantities of hydrogen gas thus producing an explosive hazard. The reaction of metallic sodium with water is sufficiently violent to cause ignition of the liberated hydrogen. Fumes from burning sodium are caustic. On contact with moisture, calcium carbide or calcium phosphide will liberate phosphine and acetylene gases. The phosphine is toxic but extremely unstable, ignites spontaneously and at the same time ignites the acetylene gas. Fires involving these items cannot be extinguished by water, carbon dioxide or foam. Smothering with an inert substance such as dry sand or dry soda ash offers effective control. Jettisoning should not be accomplished in a port or roadstead as the floats will continue to burn until filler is consumed jeopardizing other vessels and piers.	*Special stowage* On deck in a portable magazine, in a deck house or other location readily accessible for jettisoning. Stowage shall be waterproof. Shall not be stowed with any other class of military explosives or any other dangerous articles.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Do not load during excessive rainy weather unless complete protection against moisture coming in contact with the package is provided. 5. Observe packages or containers for evidence of sifting or inability to retain contents and reject any showing such signs. 6. In event a package is damaged and powder is spilled, immediately stop operations and sweep up any loose powder. 7. Remove damaged container and residue of powder to a safe location. 8. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 9. Cargo nets w/o trays, skipboards, pallets or pieplates are not permitted. 10. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
II-J						
Chemical ammunition. TH incendiary composition filled (solid).	All chemical ammunition filled with incendiary composition TH (thermite, thermate or thermate magnesium) with or w/o fuze or explosive element. Includes but is not limited to: Bombs, incendiary cluster. Grenades, thermate. Incendiary safe destroyers. Thermite burning charges. Thermite charges under water. Thermite igniters. Thermite units 10 lbs. NOTE: The U. S. Army and Navy, when shipping ammunition filled with these incendiary compositions, mark such ammunition or containers thereof with the Chemical Corps symbol of the filler and with one purple band.	"Explosive bomb" "Grenade, hand" "Igniter" "Special fireworks"	A A C B	The principal hazard of TH filled items is involvement in a fire. They burn rapidly with intense heat and usually form large quantities of molten iron. The presence of a small explosive charge in some TH items forms an additional hazard in case of a fire. Carbon dioxide and carbon tetrachloride extinguishers should not be used to combat fires involving TH because the reaction of carbon tetrachloride with molten metal produces toxic gases and that of carbon dioxide on magnesium may produce an explosion. In the hold of a vessel large volumes of water are recommended as an extinguishing agent. Fire fighters should work from behind barriers when possible.	*Deep tank stowage or ammunition stowage* Shall be stowed only in a deep tank or lower hold, and in all cases bottom stowed. For stowage adjacent to other dangerous articles see § 146.29-59. For limited quantity shipments not in excess of 500 lbs. net TH content, see § 146.29-99 (b), NOTE D.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Observe packages or containers for evidence of failure or inability to retain contents and reject any showing such signs. 5. Cargo handling stevedore gear may be trays, skipboards, pallets or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 6. Cargo nets w/o trays, skipboards, pallets or pieplates are not permitted. 7. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate, fitted with cargo net or sideboards shall not exceed 4,000 lbs. plus 10%. 8. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 9. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 10. Wire rope slings are permitted when handling unboxed bombs or containers filled with TH. (See table of Limiting Loads, Class X-A.) 11. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.
III						
Fuzes, PD w/o boosters; fuzes, AT mine, non-chemical, w/o boosters; fuzes, bomb tail, w/o boosters; fuzes, tracer; primer detonators; primers, etc.	Point fuzes w/o boosters for projectiles and rockets; anti-tank mine fuzes (non-chemical) w/o booster; bomb tail fuzes w/o boosters; primer detonators, cannon primers, other than lock primers, when packed in separate shipping containers. Includes but is not limited to: Case combination primer. Case electric primer. Case percussion ignition primer. Case percussion primer. Combination electric and percussion primer. Detonating fuzes, Class C, made and packed so that they will not cause functioning of other fuzes, explosives or explosive devices if one of the fuzes detonates in a shipping container. Fuze, anti-tank, mine (non-chemical) w/o booster. Fuze, base percussion. Fuze, bomb tail, w/o booster. Fuze, PD w/o booster. Fuze, percussion. Fuze, MTSQ w/o booster. Fuze, tracer. Fuze, TSQ w/o booster. Igniter, Jato, such as M151. Igniter for rockets, i. e. M12, M18, M20. Magazine, extension primers. Mines practice with spotting charge and/or fuze. Percussion primers other than lock. Primer, detonators, fuze, bomb, various delays.	"Cannon primers" "Combination fuzes." "Combination primers." "Detonating fuzes, Class C." "Igniter, jet thrust" "Percussion caps" "Percussion fuzes" "Time fuzes" "Tracer fuzes"	C C C C B C C C C	The amount of explosives in single items of this class varies from 30 to 500 grains. It is likely they will explode progressively. Structural damage caused by the pressures generated would probably be limited to the immediate vicinity. Missiles are light and usually fall within 300 feet. These types of ammunition are loaded with explosives that are sensitive to shock and friction. Shock and fire are the principal hazards to this type of ammunition. If involved in a fire, fire fighting personnel should take normal precautions and not expose themselves unnecessarily. Fire may be controlled and extinguished by flooding or spraying with large amounts of water.	*Ammunition stowage, special stowage, or portable magazine which may be stowed in a hold or on deck* This class of ammunition shall not be overstowed with any other cargo or ammunition except Classes VI and VIII. May be stowed in the same lower hold or tween-deck hold with Class II-F provided the Class II-F is bottom stowed and provided further that no other class of military explosives is stowed in the hold below or the deep tank directly below. For stowage adjacent to other dangerous articles see § 146.29-59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Gravity roller conveyors not authorized. 4. Do not use chute in loading or unloading. 5. Trays with sideboards shall be used when loading by mechanical means. 6. Packages shall not be stacked on a tray to a height above its sideboards. 7. Trays shall not be swung unnecessarily over open hatches or holds containing military explosives or other dangerous cargo. 8. Trays shall be hoisted and lowered carefully and deposited without undue shock on a mattress or other shock absorbing material. 9. Packages shall be stowed in the position indicated by their markings. 10. The maximum permitted weight per draft when handled by tray with sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tiers from shifting or falling from the draft. 13. A portable magazine in which this class of ammunition is stowed and hoisted on board a vessel as a unit load shall not exceed 4,000 lbs. plus 10%. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
IV-A						
Fixed ammunition without explosive projectile (shell) and like items.	Fixed ammunition with solid projectile, blind loaded projectile, empty projectile or without projectile—(the explosive components consisting of the primer and powder charges in a cartridge case); cartridge cases primed and containing powder charges; practice grenades; practice and target rockets. Includes but is not limited to: Ammunition for cannon: Blank. Blind loaded and plugged (BL & P). Blind loaded with tracer (BL & T). Empty projectile. Solid projectile. Without projectile. Ammunition, armor piercing, shot (w/o HE). Cartridges, blank, saluting. Cartridges, semi-fixed for Navy type guns: 5″/38, 5″/51, 5″/54, 6″/47. Cartridges, semi-fixed 4.7″ (Army w/o projectile). Charges: Catapult (other than aircraft personnel). Grenade, hand, practice. Jato (ICC Class B). Rocket—target. Rocket motors (w/o rocket heads). Rocket, packed with but not assembled to inert rocket heads. Rocket, practice, assembled with inert head.	"Ammunition for cannon with empty projectile." "Ammunition for cannon with inert-loaded projectile." "Ammunition for cannon with solid projectile." "Ammunition for cannon w/o projectile." "Jet thrust units (JATO) Class B." "Special fireworks"...	B B B B B B	The principal hazard associated with this class of ammunition is its involvement in a fire. Pressures which would cause serious structural damage are not usually generated. If involved in a fire, it is possible the fire may be controlled or extinguished by flooding or spraying with large amounts of water. Fire-fighting personnel should take appropriate precautions and not expose themselves.	*Ammunition stowage* Boxed and crated ammunition may be overstowed with nondangerous cargo and permitted explosives. Tanked ammunition may be overstowed with bomb fin assemblies, empty water fillable practice bombs and empty auxiliary gas tanks. May be stowed in the same deep tank, lower hold or tweendeck hold with Class II-F ammunition provided the Class II-F is bottom stowed and provided further that no other class of military explosives is stowed in the hold or the tank below. May be stowed in the same deep tank or lower hold with Class II-J ammunition provided the Class II-J is bottom stowed. For stowage adjacent to other dangerous articles see § 146.29-59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 4. Cargo nets without trays, skipboards, pallets or pieplates are not authorized. 5. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 6. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 7. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 8. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.
IV-B						
Fixed and semi-fixed ammunition with explosive loaded projectile or shell.	Fixed and semifixed ammunition, packed as complete rounds (including artillery, mortar and gun ammunition) grenades and rockets, when assembled with explosive projectiles or bursting charge. Small-arms ammunition with explosive bullets or projectiles. Includes but is not limited to: Anti-personnel mine, M2 and M3. Artillery ammunition of calibers 0.75″ to 5″ inclusive, with explosive, illuminating or incendiary projectiles. Grenades, hand, defensive. Grenades, hand, defensive, TNT filled, fuzed or unfuzed. Grenades, hand, fragmentation. Grenades, rifle, AT. Grenades, rifle, HE filled. Gun ammunition of calibers 0.75″ to 5″ inclusive, with explosive, illuminating or incendiary projectiles. Mortar ammunition (explosive or illuminating). Rockets, with explosive heads packed in the same container with, but not assembled to motors. Rockets, 2.36″ A. T. (Bazooka). Rockets, 2.75″ FFAR, assembled or unassembled. Rockets, 3.5″ HEAT. Small-arms ammunition with explosive bullets.	"Ammunition for cannon with explosive projectile." "Ammunition for cannon with incendiary projectile." "Ammunition for small arms with explosive bullets." "Ammunition for small arms with explosive projectile." "Hand grenades"... "Rifle grenades"... "Rocket ammunition with explosive projectile." "Rocket ammunition with illuminating projectile."	A A A A A A A A	Articles in this class present a severe fire hazard and usually explode progressively, only a few boxes at a time, many explosions of individual rounds being of a very low order. Pressure which would cause serious structural damage is not usually generated. Most missiles would fall within 600 feet. If involved in a fire it is possible the fire may be controlled or extinguished by flooding or spraying with large amounts of water. Fire fighting personnel should take appropriate precautions and not expose themselves unnecessarily.	*Ammunition stowage* Boxed and crated ammunition may be overstowed with nondangerous cargo and permitted explosives. Tanked ammunition may be overstowed with bomb fin assemblies, empty water fillable practice bombs and empty auxiliary gas tanks. May be stowed in the same deep tank, lower hold or tween-deck hold with Class II-F ammunition provided the Class II-F is bottom stowed and provided further that no other class of military explosives is stowed in the hold or tank below. May be stowed in the same deep tank or lower hold with Class II-J ammunition provided the Class II-J is bottom stowed. For stowage adjacent to other dangerous articles see § 146.29-59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Cargo handling stevedore gear may be trays, skipboards, pallets or pieplates, provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 4. Cargo nets without trays, skipboards, pallets or pieplates are not authorized. 5. The maximum permitted weight per draft when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 6. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 7. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 8. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
V Separate loading shells filled with explosive "D".	Separate loading shells of all calibers filled with explosive "D", fuzed or unfuzed; and shells filled with explosives "D", fuzed or unfuzed, not assembled to or packed with cartridge cases. Explosive "D" is used as a bursting charge for all projectiles which must withstand severe stresses and shocks before detonating; such as armor-piercing projectiles. Includes but is not limited to: Armor piercing shells. Deck piercing shells. NOTE: In general, Classes V and VII types of projectiles will be shipped in accordance with the following basic rules: Point fuzed shells with false ogives will be crated. Point fuzed shells without false ogives will have grommets and eyebolt lifting plugs. Base fuzed shells with relatively fragile parts such as false ogives, steel caps and windshields will be crated. Base fuzed shells without false ogives will not be crated but will have grommets. All Navy 6" through 16" separate loading projectiles are explosive "D" loaded.	"Explosive projectile".	A	If involved in a fire will very likely detonate as a result of exposure to heat. These shells usually explode one at a time and in practically all cases with low order explosion. There is no certainty that en masse explosion will not occur. Most missiles will fall within 1,200 feet.	*Ammunition stowage* This ammunition, boxed, unboxed, or palletized units thereof, may be overstowed. Care must be taken not to damage rotating bands of shells that are not in containers. May be stowed in the same deep tank, lower hold or tween deck hold with Class II–F ammunition provided the Class II–F is bottom stowed and provided further that no other class of military explosives is stowed in the same hold below or in the tank below. Class V when unfuzed and no fuzes packed in container may be stowed with Class X–A. For stowage adjacent to other dangerous articles see § 146.29–59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Bare projectiles (shells) shal not be rolled except under hand control and on a level surface without appreciable incline. 5. Protect rotating bands from damage. Avoid injury to or removal of paint or grease from bourrelet. 6. When handling items packed in outside containers, cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates, provided they are fitted with cargo nets or sideboards. Boxes or trays with removable sides are authorized. 7. Shell tongs or lifting stud and eye are authorized. Wire slings of a design approved by the Captain of the Port may be used. 8. Cargo nets without trays, skipboards, pallets, or pieplates are not permitted. 9. The maximum permitted weight per draft when handled by tray, skipboard, pallet, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 10. Single shells weighing in excess of 2,201 lbs. must be loaded or unloaded one at a time. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed so as to prevent the upper tier or tiers from shifting or falling from the draft. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.
VI BD fuzes. Bomb fuzes with boosters. PD fuzes with boosters. Rocket fuzes with boosters.	Base detonating fuzes (for all calibers) and PD fuzes with boosters; bomb and rocket fuzes with boosters; auxiliary booster assembled to or packed with the fuze; depth charge pistol with detonator and with or without booster assembled to or packed with pistol. (For boosters, auxiliary boosters, bursters, etc., having no initiating or priming elements and packed independently, see Class X–A). Includes but is not limited to: Adapter booster, with detonator. Auxiliary booster, with detonator. Boosters. Burster, with detonator. Depth charge pistol, with detonator and with or without booster. Detonating fuzes, Class A. Fuze: Auxiliary detonating. Base detonating (for all calibers). Bomb nose. Bomb tail with booster. Hydrostatic bomb. Hydrostatic bomb tail. Point detonating with booster. Rocket. Fuzes with boosters assembled thereto. Mine, anti-personnel, non-metallic, M14. Mine firing mechanism, C–1.	"Detonating fuzes, Class A".	A	The amount of explosives in single items does not usually exceed one-half pound. It is likely they would explode progressively. Structural damage caused by the pressure generated would probably be limited to the immediate vicinity. Missiles are light and usually fall within 600 feet. These types of ammunition are loaded with explosives that are sensitive to shock and heat. If involved in a fire, it is possible the fire may be controlled or extinguished by flooding or spraying with large amounts of water. Fire-fighting personnel shall take appropriate precautions and not expose themselves unnecessarily.	*Ammunition stowage, special stowage, or portable magazine, which may be stowed in a hold or on deck* This class of ammunition shall not be overstowed with any other cargo or military explosives except Classes III and VIII. For stowage adjacent to other dangerous articles see § 146.29–59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Gravity roller conveyors not authorized. 4. Do not use chute in loading or unloading. 5. Trays with sideboards shall be used when loading by mechanical means. 6. Packages shall not be stacked on a tray to a height above its sideboards. 7. Trays shall not be swung unnecessarily over open hatches or holds containing military explosives or other dangerous cargo. 8. Trays shall be hoisted and lowered carefully and deposited without undue shock on a mattress or other shock-absorbing material. 9. Packages shall be stowed in the position indicated by their markings. 10. The maximum permitted weight per draft when handled by tray with sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 13. A portable magazine in which this class of ammunition is stowed and hoisted on board a vessel as a unit load shall not exceed 4,000 lbs. plus 10%. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
VII Separate loading shells with other than explosive "D".	Separate loading shell of all calibers, fuzed or unfuzed, except those loaded with explosive "D"; and loaded shell except those loaded with explosive "D", fuzed or unfuzed, not assembled to or packed with cartridge cases; fuzed cluster fragmentation bombs, rocket heads fuzed or unfuzed and less than 200 lbs. gross weight, anti-tank mines, packed with fuzes in same container or box. Includes but is not limited to: Anti-tank mines, packed with fuzes in same container or box. Cluster, fragmentation bomb (with individual bombs fuzed but without cluster fuzed). High explosive anti-tank shell. High explosive shell. Rocket heads fuzed or unfuzed and under 200 lbs. not assembled to or shipped with rocket motors. Wafers of fragmentation bombs (with individual bombs fuzed). NOTE: In general, Classes V and VII types of projectiles will be shipped in accordance with the following basic rules: Point fuzed shell with false ogives will be crated. Point fuzed shell without false ogives will have grommets and eyebolt lifting plugs. Base fuzed shell with relatively fragile parts such as false ogives, steel caps, and windshields will be crated. Base fuzed shells without false ogives will not be crated but will have grommets to protect rotating bands.	"Explosive bomb"-- "Explosive mine"--- "Explosive projectile".		The principal hazard in transportation will be involvement in fire from sources other than the ammunition itself. Shells or bombs in this class may explode progressively but very likely en masse. Most missiles will fall within 1,800 feet and detonation will result in severe structural damage increasing in severity and range in relation to the amount of high explosives involved.	*Ammunition stowage* This ammunition boxed, unboxed, or palletized units thereof, may be overstowed. Care must be taken not to damage rotating bands of unboxed shells. This class of ammunition when unfuzed and no fuzes packed in container may be stowed with Class X-A. For stowage adjacent to other dangerous articles see §146.29-59.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Bare projectiles (shells) shall not be rolled except under hand control and on a level surface without appreciable incline. 5. Protect rotating bands from damage. Avoid injury to or removal of paint or grease from bourrelet. 6. When handling items packed in outside containers, cargo handling stevedore gear may be trays, skipboards, pallets or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with removable sides are authorized. 7. Shell tongs or lifting stud and eye are authorized. Wire slings of a design approved by the Captain of the Port may be used. 8. Cargo nets without trays, skipboards, pallets, or pieplates are not permitted. 9. The maximum permitted weight per draft when handled by tray, skipboard, pallet, or pipeplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 10. Single shells weighing in excess of 2,201 lbs. must be loaded or unloaded one at a time. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 13. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.
VIII AT mine fuzes (chemical), etc. Blasting caps. Detonators.	Blasting caps of all types; detonators; grenade fuzes, detonating type; fuzes, anti-tank mine (chemical). Includes but is not limited to: Blasting caps. Blasting caps with safety fuze. Destructor, explosive, M10 and MK2 Mod O. Detonating grenade fuzes. Detonators, all types. Detonators, torpedo. Electric blasting caps. Fuzes, AT mine (chemical). Percussion elements (Army). Primers, electric. Priming assembly for demolition outfit MK104.	"Blasting caps"----- "Blasting caps with safety fuze." "Boosters (explosive)". "Detonating fuzes, Class A". "Electric blasting caps". "Precussion caps"--- "Percussion fuzes"-- "Time fuzes"--------	(*) (*) A A (*) C C C *Class A (more than 1000). Class C (1000 or less).	The two primary hazards in the transportation of these devices are shock and involvement in fire. A collateral hazard is the effect of the detonating of these articles upon other explosives or ammunition stowed in proximity to such articles. All of this class ammunition in a unit stowage may explode at one time, but as the total amount of explosives involved is limited structural damage would not tend to be great. Light missiles having limited range would be formed.	*Magazine stowage "A", special stowage, or portable magazine, which may be stowed in a hold or on deck.* The location of magazines is restricted to a hold or compartment in which no other explosives or ammunition (except Classes I, III, and VI) are stowed. Shall not be stowed within 8 feet of the vessel's side. This class of ammunition shall not be overstowed with any other cargo. For detail of stowage see § 146.-29-93. For stowage with other dangerous articles see § 146.29-59.	Ammunition of Class VIII constitutes a distinct class of ammunition when not assembled in projectiles, bombs, or other ammunition. These types of ammunition are loaded with explosives that are sensitive to shock. The handling and stowage provisions of these regulations give consideration to the probable effect accidental detonation of these devices may have upon other ammution or explosives stowed within the vessel. 1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Gravity roller conveyors are not authorized. 4. Do not use chute in loading or unloading. 5. Trays with sideboards shall be used when loading by mechanical means. 6. Packages shall not be stacked on a tray to a height above its sideboards. 7. Trays shall not be swung unnecessarily over open hatches or holds containing military explosives or other dangerous articles. 8. Trays shall be hoisted and lowered carefully and deposited without undue shock on a mattress or other shock absorbing material. 9. Packages shall be stowed in the position indicated by their markings. 10. The maximum permitted weight per draft when handled by tray with sideboards shall not exceed 1,000 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 2,400 lbs. plus 10%. 12. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 13. A portable magazine in which this class of ammunition is stowed and hoisted on board a vessel as a unit load shall not exceed 2,400 lbs. plus 10%. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
IX–A Explosives in bulk such as: Black powder. Smokeless powder for small-arms, etc.	Black powder in bulk, ballistite for small-arms, smokeless powder for small-arms, black blasting powder, flash powder and powder having similar hazard characteristics to those named: Includes but is not limited to: Ballistite for small-arms. Black blasting powder. Black fuze powder. Black pellet powder. Black powder. Black powder and magnesium mixtures. Black powder, unglazed. Black rifle powder. Black shell powder. Bull's eye powder #2. Cannon powder. Charges, Lyle gun. Charges, saluting. Charges, spotting, black powder, M1A1, M3, M4. Depth charge impulse charges. E. C. blank fire powder. Empty powder bags with black powder igniters. FF black powder. Firecracker, M80. FFFG black powder. Flash cartridges over 72 grains. Flash powder sheets inner unit over 2 ounces. Flash reducer (black powder with potassium sulfate). Flash sheets in bulk. Flashlight powder in bulk. High vel #65. Igniter pads. IMR #1185. IMR #4166. IMR #4676. Low blasting explosives. Pistol powder #5. Pyrotechnic mixture, in excess of 72 grains. Rifle powder. Simulator: Boobytrap, flash, illuminating, whistling, in excess of 72 grains. Boobytrap, whistling, M114. Gunflash, M110. Projectile, air burst. Projectile, ground burst M115. Smoke puff charge. Smokeless powder for small-arms. Sodium nitrate black powder. Spherehexagonal black powder. Sporting powder. Sulfurless black powder. Torpedo impulse charges.	"Black powder"---- "Empty powder bags with black powder igniters." "High explosives"-- "Low explosives"-- "Propellant explosives, Class A". "Propellant explosives, Class B".	A C A A A B	Group IX–A explosives constitute a group having relatively similar hazard characteristics which principally consists of being very susceptible to ignition by spark or friction. They burn with explosive violence and under even slight confinement are likely to explode en masse. They are adversely affected by high temperature. Powder dust is especially hazardous.	*Magazine storage "A"* When Class I ammunition is stowed in the same hold or magazine with this Class the two stowages must be separated by a partition bulkhead or type "A" dunnage floor. Shall not be overstowed with any other kind of cargo. For stowage with other dangerous articles see § 146.29–59. Shall not be loaded at an ammunition loading pier.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Packages shall be handled in such a manner as to insure that no spark or friction will occur. 4. Observe packages or containers for evidence of sifting or inability to retain contents and reject any showing such signs. 5. In event a package is damaged and powder is spilled, immediately stop operations and sweep up any loose powder. 6. Remove damaged container and residue of powder to a safe location. 7. Gravity roller conveyor not authorized. 8. Drums and kegs shall be stowed on end with bungs up. Metal cans shall be stowed with filling openings up. Packages or containers shall be stowed in the position indicated by their markings. 9. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 10. Cargo nets without trays, skipboards, pallets, or pieplates are not permitted. 11. The maximum permitted weight per draft when handled by tray, skipboard, pallet, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 12. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 13. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
IX-B						
High explosives such as: Demolition blocks, etc. Dynamite. TNT.	High explosives in bulk, items of high explosive such as shaped charges for demolition or other purposes, and powder in bulk, possessing the characteristics of being likely to detonate en masse. Includes but is not limited to: Amatex. Amatol. Ammonite. Ammonium picrate. Ammonol. Anchor charges. Aqueous snakes. A. S. A. pellets. Atlas amodyn. Balls of cellulose nitrate. Baranol. Beehive charges. Blasting gelatin. British beehive. C. E. pellet. Charge, demolition, block. Charge, demolition, chain. Chlorate explosives, dry. Chlorate propellants. Clams, M3. Composition "A," etc. Composition "B," "B2," etc. Composition "C," "C2," etc. Cratering charges. Cyclonite, RDX. Cyclotol. Demolition blocks. Depth bomb explosives. Dinitrotoluene. (DNT) Dynamite. Ednatol. Explosive "D." (Ammonium picrate.) Explosive gelatin. 808 plastic. Gelatin dynamite. Gelignite. General wade. Grenite. Guncotton. HBX. Haleite. Hayrick charges. Hercomite. Heogen. Limpet. Minol. Negative cotton. Nitrocellulose, dry. Nitroguanidine, dry. Nitrostarch, dry. Nitrourea. Nobel's ammonal (704B). Nobel's explosives (808). PEP 1, 2, and 3. Pentolite. Picrates, dry. Picric acid, dry or wet. Plastic explosives. PTX, 1 and 2. RDX. Reddy Fox. Seachest demolition blocks. Shaped charges. Shellite. Snake demolition explosive charges. Supplementary charges. Tetryl. Tetrytol. TNT. TNX. Torpex.	"High explosives"...	A	High explosives in bulk, and demolition blocks have relatively similar hazard characteristics. They may be considered stable in stowage. Can be ignited by spark or friction and detonated by shock. When ignited will burn vigorously. Bulk shipments in amounts likely to be found on board vessels would, if ignited be very likely to detonate.	*Ammunition stowage* Shall not be stowed in the same hold or compartment with other permitted ammunition, or explosives, unless the two are separated by a partition bulkhead or a Type "A" dunnage floor. Shall not be overstowed with any other kind of cargo. For stowage adjacent to other dangerous articles see § 146.29-59. Shall not be loaded at an ammunition loading pier. Military dynamite when transported on a commercial vessel simultaneously with commercial dynamite, and no other military explosives are on board, shall be shipped under those requirements set forth for the shipment of commercial dynamite.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble or walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Packages shall be handled in such a manner as to insure that no spark or friction will occur. 5. Observe packages or containers for evidence of sifting or inability to retain contents and reject any showing such signs. 6. In event a package is damaged and powder is spilled, immediately stop operations and sweep up loose powder. 7. Remove damaged containers and residue of powder to a safe location. 8. Gravity roller conveyors not authorized. 9. Packages or containers shall be stowed in the position indicated by their markings. 10. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 11. Cargo nets without trays, skipboards, pallets, or pieplates are not permitted. 12. The maximum permitted weight per draft when handled by pallet, skipboard, tray, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 13. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 14. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent the upper tier or tiers from shifting or falling from the draft. 15. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
IX-B—Con.						
High explosives such as: Demolition blocks, etc. Dynamite. TNT. Continued.	High explosives in bulk, etc.—Continued Includes but is not limited to: Tridite. Trilite. Trimonite. Trinitroaniline. Trinitrobenzene. Trinitrocresol. Trinitrophenylmethylnitramine. Trinitroresorcinol. Trinitronal. Trinitrotoluene. Trinitroxylene. Trinitroxylol. Triton blocks. Trojan powder. Urea nitrate, dry or wet.					
IX-C						
Initiating and priming explosives in bulk.	Initiating and priming explosives when shipped in bulk. Includes but is not limited to: Diazodnitrophenol (DDNP, DINOL). Guanyl-nitrosamino-guanilidene-hydrazine. Guanyl-nitrosamino-guanyl-tetrazene. Lead azide. Lead styphnate. Lead trinitroresorcinate. Mercury fulminate. Nitro mannite. Nitrosoguanidine. Pentaerythrite tetranitrate. PETN. Tetrazene. NOTE: Bulk priming or initiating explosives in dry condition are not permitted to be transported on board vessels.	"Initiating explosive"	A	Bulk initiating and priming explosives constitute a distinct class of explosives. They are extremely sensitive to shock. The only permitted packing for transportation in bulk consists of a sift proof cotton duck, rubber or rubberized cloth bag in a metal barrel or drum or wooden barrel or keg and wet with 20 to 40% of water or water alcohol mixture. Mercury fulminate and lead azide also have 3" of sawdust saturated with water between the bag and the outer container.	*Magazine stowage "A", special stowage or portable magazine stowage.* Shall not be stowed in the same magazine with other ammunition or explosives. When tiering containers of explosives of this class in a magazine, have each tier floored off with a type "A" dunnage floor. The location of a magazine is restricted to a hold or compartment in which no other military ammunition (except Class I) is stowed. Shall not be stowed within 8 feet of vessel's side. This class of ammunition shall not be overstowed with any other cargo. For stowage adjacent to other dangerous articles see §146.29-59. Shall not be loaded at an ammunition loading pier.	1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Do not roll barrels on their bilges. 5. Gravity roller conveyer not authorized. 6. Barrels or drums contain 20 to 40% water or water alcohol mixture. 7. Observe barrels, drums or containers for evidence of leakage or inability to retain contents and reject any showing such signs. 8. In event a container is damaged immediately stop operations and carefully remove damaged container to a safe location. 9. Drums and kegs shall be stowed on end with bungs up. Containers shall be stowed in the position indicated by their markings. 10. Trays with sideboards shall be used when handling by mechanical means. 11. Containers shall not be stacked on a tray to a height above its sideboards. 12. The maximum permitted weight per draft when handled by tray fitted with sideboards shall not exceed 1,000 lbs. plus 10%. 13. Trays shall be hoisted and lowered carefully and deposited without undue shock on a mattress or other shock absorbing material. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
X-A						
Explosive bombs, mines, torpedoes, etc.	Bombs, bomb clusters, mines, depth charges, warheads (all unfuzed), rocket heads (fuzed or unfuzed and without motors 200 lbs. or more gross weight); projector charges (unfuzed and without motors) torpedo bangalore (unfuzed); and other unfuzed ammunition filled with relatively large amounts of HE; all possessing a similar hazard characteristic of en masse detonation. Includes but is not limited to: Activator—without detonator. Bombs: Armor-piercing. Demolition. Depth. Depth charge. Fragmentation. G. P. Photoflash. S. A. P. Shallow water depth. Boosters—without detonators. Boosters, adapter—without detonators. Burster—without detonator. Jato units, Class A. Jet thrust units (Jato), Class A. Mines: Aerial. Aircraft. Anti-personnel (unfuzed). Anti-personnel fragmentation (unfuzed). Anti-tank (unfuzed). Anti-tank non-metallic (unfuzed). Grenade. High explosive. Land. Projector charges. Rocket heads (fuzed or unfuzed and without motors 200 lbs. or more gross weight). Torpedo bangalore. Torpedo warheads.	"Booster (explosive)." "Burster (explosive)." "Explosive bombs". "Explosive mines". "Explosive projectiles." "Explosive torpedoes." "Jet thrust units (JATO) Class A."	A A A A A A	Fire and shock are the primary hazards to this class of ammunition. They are particularly dangerous because of their tendency to detonate en masse if involved in a fire or subjected to shock. Detonation will result in severe structural damage, increasing in severity and range in relation to the amount of high explosives involved. All high explosive loaded items in this class having thin container walls are relatively easily ruptured or dented. Denting of the container walls by impacts, though not sufficiently severe to rupture them has occasionally resulted in partial or complete detonation, and such kind of ammunition is said to possess "container-dent sensitivity." A certain degree of confinement combined with local heating of the contained explosive by a particular kind of impact apparently causes instantaneous explosive action. But whatever may be the actual mechanics of this phenomenon, the kinds of impacts known to have caused explosion of these items include such impacts as dropping on or striking against a rounded corner, similar to a hatch coaming, impact of one bomb against another, or being struck by handling and transportation equipment. In placing or removing dunnage, an accidental or misdirected blow from a sledge hammer, pinch bar or other hand tool may cause such explosions. The impact need not be violent. A short drop of only 2 feet caused a low order detonation of a depth bomb. Warheads, depth bombs, depth charges, Naval mines, and like items are in the "Container-dent sensitivity" category. All of the foregoing also apply in substantial effect to containers of this class of ammunition that are not thin walled.	*Ammunition stowage* Items in this class having thin container walls and said to possess "container-dent sensitivity" shall not be tiered one layer on top of another unless they are boxed crated or dunnaged in such a manner that they are properly protected to withstand the superimposed weight. Items having thin walls and possessing "container-dent sensitivity" may be overstowed only with very light cargo such as bomb fin assemblies, empty water fillable practice bombs and empty auxiliary gas tanks. Items of this class having thick walled containers may be tiered one layer on top of another provided they are so stowed, dunnaged, blocked and/or braced as to prevent movement that is likely to damage the ammunition, the vessel or other cargo. Shall not be overstowed with inert permitted cargo having lesser bearing surface or greater unit weight than any item stowed below. Class X-A items shall not be stowed in the same hold or compartment with permitted military explosives other than this class or Class X-B separated by a partition bulkhead or a type "A" dunnage floor. Except for wooden barrels or boxes and fiberboard containers, no flammable or combustible material as cargo shall be stowed in a hold or compartment in which this class of ammunition is stowed. When photoflash bombs are stowed with any other military explosive, including items of this class the two stowages must be separated by a partition bulkhead or a type "A" dunnage floor. For stowage adjacent to other dangerous articles see § 146.29-59. Shall not be loaded at an ammunition loading pier.	1. Handle by hand or mechanical means. 2. Do not drop, drag, slide, tumble, walk or otherwise subject these articles to shock. 3. Do not use chute in loading or unloading. 4. Cargo nets shall not be used except to enclose a pallet, skipboard, or tray, or as a preventer or save-all. 5. Bombs, not crated or boxed, without external fittings or with external fittings protected by lug guards, may be rolled only under continuous hand control on level surfaces or on non-powered roller conveyors, provided these surfaces or conveyors are relatively level and free from projections. 6. Unboxed or uncrated warheads, depth bombs, depth charges, or other thin walled items shall not be tiered in "making up" drafts (hoists). 7. No "cant" or barrel hooks shall be used on this class of ammunition. 8. Depth charges and rocket heads that are not boxed or crated shall be loaded by use of pallet, skipboard or tray fitted with cargo net or sideboards. 9. Bombs, except depth bombs, may be loaded by use of wire rope slings, or by pallet, skipboard or tray fitted with cargo net or sideboards. 10. Depth bombs shall be loaded only by using pallet, skipboard, or tray fitted with cargo net or sideboards. (See § 146.29-39.) 11. Slings for use in hoisting this class of ammunition must be approved for use by the Captain of the Port. 12. Single slings made up in multiple assembly with spreader may be used in handling bombs that do not exceed 1,101 pounds each. Two-legged slings shall be used in handling bombs of more than 1,101 pounds each. *Table of Limiting Loads* (Applicable when handling bombs by sling method) Weight of individual bomb or cluster: — *Maximum units in one draft* 1 lb. to 250 lbs.[1] — 8 276 lbs. to 500 lbs.[1] — 6 551 lbs. to 1,000 lbs.[1] — 4 1,101 lbs. to 2,000 lbs.[1] — 2 Over 2,200 lbs — 1 [1]A tolerance of 10% per unit is allowed. (For example, a bomb weighing 550 lbs. may be considered as coming within the 500 lb. group.) 13. Naval mines, uncrated and fitted with lifting eye shall be loaded by using wire rope and shackle. 14. Naval mines, uncrated and not fitted with lifting eye may be loaded by use of wire rope slings or trays fitted with sideboards. 15. The following items when boxed or crated shall be loaded by the use of pallet, skipboard or tray fitted with cargo net or sideboards, photoflash bombs, antitank mines, antipersonnel mines, naval mines, warheads, depth charges, torpedo bangalore, projector charges and rocket heads. 16. Warheads, crated in such a manner that the nose lifting ring is exposed may be loaded by means of said ring. 17. The maximum permitted weight per draft, when handled by pallet, skipboard, tray or pie-plate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 18. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 19. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 20. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
X-B						
Explosive bombs, mines, torpedoes, etc., packed with fuzes in integral package. (Fuzes will not detonate item with which packaged nor adjacent packages.)	Bombs, bomb clusters, mines, depth charges warheads (all unfuzed), projector charges (unfuzed and without motors), torpedo bangalore (unfuzed), and other unfuzed ammunition filled with relatively large amounts of HE; all possessing a similar hazard characteristic of en masse detonation. The fuze is packed integral with the item, but the fuze will not detonate the item with which packaged nor adjacent packages. Includes but is not limited to: Bombs: Armor-piercing. Demolition. Depth. Depth charge. Fragmentation. G. P. Photoflash. S. A. P. Shallow water depth. Mines: Aerial. Aircraft. Anti-personnel (unfuzed). Anti-personnel fragmentation (unfuzed). Anti-tank (unfuzed). Anti-tank non-metallic (unfuzed). Grenade. High explosive. Land. Projector charges. Torpedo bangalore. Torpedo warheads.	"Explosive bombs". "Explosive mines". "Explosive projectiles." "Explosive torpedoes."	A A A	Fire and shock are the primary hazards to this class of ammunition. They are particularly dangerous because of their tendency to detonate en masse if involved in a fire or subjected to shock. Detonation will result in severe structural damage, increasing in severity and range in relation to the amount of high explosives involved. All high explosive loaded items in this class having thin container walls are relatively easily ruptured or dented. Denting of the container walls by impacts, though not sufficiently severe to rupture them has occasionally resulted in partial or complete detonation, and such kind of ammunition is said to possess "container-dent sensitivity." A certain degree of confinement combined with local heating of the contained explosive by a particular kind of impact apparently causes instantaneous explosive action. But whatever may be the actual mechanics of this phenomenon, the kinds of impacts known to have caused explosion of these items include such impacts as dropping on or striking against a rounded corner, similar to a hatch coaming, impact of one bomb against another, or being struck by handling and transportation equipment. In placing or removing dunnage, an accidental or misdirected blow from a sledge hammer, pinch bar or other hand tool may cause such explosions. The impact need not be violent. A short drop of only 2 feet caused a low order detonation of a depth bomb. Warheads, depth bombs, depth charges, Naval mines, and like items are in the "Container-dent sensitivity" category. All of the foregoing also apply in substantial effect to containers of this class of ammunition that are not thin walled.	*Ammunition stowage* Items in this class having thin container walls and said to possess "container-dent sensitivity" shall not be tiered one layer on top of another unless they are boxed, crated or dunnaged in such a manner that they are properly protected to withstand the superimposed weight. Items having thin walls and possessing "container-dent sensitivity" may be overstowed only with very light cargo such as bomb fin assemblies, empty water fillable practice bombs and empty auxiliary gas tanks. Items of this class having thick walled containers may be tiered one layer on top of another provided they are so stowed, dunnaged, blocked and/or braced as to prevent movement that is likely to damage the ammunition, the vessel or other cargo. Shall not be overstowed with inert permitted cargo having lesser bearing surface or greater unit weight than any item stowed below. Class X-B items shall not be stowed in the same hold or compartment with permitted military explosives other than this class or Class X-A unless the two are separated by a partition bulkhead or a type "A" dunnage floor. Except for wooden barrels or boxes and fiberboard containers no flammable or combustible material as cargo or containers of same shall be stowed in a hold in which this class of ammunition is stowed. When photoflash bombs are stowed with any other military explosive, including items of this class, the two stowages must be separated by a partition bulkhead or a type "A" dunnage floor. For stowage adjacent to other dangerous articles see § 146.29-59. Shall not be loaded at an ammunition loading pier.	1. Handle by hand or mechanical means. 2. Do not drop, drag, slide, tumble, walk or otherwise subject these articles to shock. 3. Do not use chute in loading or unloading. 4. Cargo nets shall not be used except to enclose a pallet, skipboard, or tray, or as a preventor or save-all. 5. Bombs, not crated or boxed, without external fittings or with external fittings protected by lug guards, may be rolled only under continuous hand control on level surfaces or on non-powered roller conveyors, provided these surface or conveyors are relatively level and free from projections. 6. Unboxed or uncrated warheads, depth bombs, depth charges, or other thin walled items shall not be tiered in "making up" drafts (hoists). 7. No "cant" or barrel hooks shall be used on this class of ammunition. 8. Depth charges and rocket heads that are not boxed or crated shall be loaded by use of pallet, skipboard or tray fitted with cargo net or sideboards. 9. Bombs, except depth bombs, may be loaded by use of wire rope slings, or by pallet, skipboard or tray fitted with cargo net or sideboards. 10. Depth bombs shall be loaded only by using pallet, skipboard, or tray fitted with cargo net or sideboards. (See § 146.29-39.) 11. Slings for use in hoisting this class of ammunition must be approved for use by the Captain of the Port. 12. Single slings made up in multiple assembly with spreader may be used in handling bombs that do not exceed 1,101 pounds each. Two legged slings shall be used in handling bombs of more than 1,101 pounds each. (See table of Limiting Loads, Class X-A). 13. Naval mines, uncrated and fitted with lifting eye shall be loaded by using wire rope and shackle. 14. Naval mines, uncrated and not fitted with lifting eye may be loaded by use of wire rope slings or trays fitted with sideboards. 15. The following items when boxed or crated shall be loaded by the use of pallet, skipboard or tray fitted with cargo net or sideboards; photoflash bombs, antitank mines, antipersonnel mines, naval mines, warheads, depth charges, torpedo bangalore, projector charges and rocket heads. 16. Warheads, crated in such a manner that the nose lifting ring is exposed may be loaded by means of said ring. 17. The maximum permitted weight per draft, when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 18. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 19. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 20. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
X-C						
Guided missiles, solid propellant motors, packed with HE warheads.	Completely assembled missiles or rockets with solid fuel motors.	"Rocket ammunition with explosive projectiles."	A	Fire and shock are the primary hazards to this class of ammunition. They are particularly dangerous because of (1) their tendency to detonate en masse if involved in a fire or subjected to shock, and (2) the combustibility and toxicity of the fuel if involved in a fire. All high explosive loaded items of this class having thin container walls are relatively easily ruptured or dented. Denting of the container walls by impact, though not sufficiently severe to rupture them may result in a partial or complete detonation. A certain degree of confinement combined with local heating of the contained explosive by a particular kind of impact causes instantaneous explosive action. These kinds of impacts are, striking against a rounded corner similar to a hatch coaming, impact of one missile against another, or being struck by handling or transportation equipment. Toxicity by inhalation of fumes is increased when fuels are ignited as the intensity of poisonous fumes is increased. Care should be exercised to minimize the exposure of personnel to the toxic effects of these mixtures and to prevent damage to the container with resulting leakage or spillage.	Class X-C items shall not be stowed in the same hold or compartment with permitted military explosives other than this class or Classes IV-A, IV-B, and VII unless the two are separated by a partition bulkhead or a type "A" dunnage floor. Except for wooden boxes or barrels and fiberboard containers, no flammable or combustible material shall be stowed in a hold or compartment in which this class of ammunition is stowed. Shall not be overstowed with any other kind of cargo. May be stowed on deck protected, except on the square of a hatch. For stowage adjacent to other dangerous articles see § 146.29-59. Shall not be loaded at an ammunition loading pier.	1. Handle by hand or mechanical means. 2. Do not drop, drag, slide, tumble, walk or otherwise subject these articles to shock. 3. Do not use chute in loading or unloading. 4. Cargo nets shall not be used except to enclose a pallet, skipboard, or tray, or as a preventor or save-all. 5. Missiles, not crated or boxed, without external fittings or with external fittings protected by lug guards, may be rolled only under continuous hand control on level surfaces or on non-powered roller conveyors, provided these surfaces or conveyors are relatively level and free from projections. 6. Unboxed or uncrated missiles shall not be tiered in "making up" drafts (hoists). 7. No "cant" or barrel hooks shall be used on this class of ammunition. 8. May be loaded by use of wire rope slings, or by pallet, skipboard or tray fitted with cargo net or sideboards. 9. Slings for use in hoisting this class of ammunition must be approved for use by the Captain of the Port. 10. Single slings made up in multiple assembly with spreader may be used in handling missiles that do not exceed 1,101 pounds each. Two legged slings shall be used in handling missiles of more than 1,101 pounds each. (See table of Limiting Loads, Class X-A). 11. The maximum permitted weight per draft, when handled by pallet, skipboard, tray or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 12. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 13. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
X-D						
Guided missiles, liquid propellant motors, packed with H.E warheads.	Completely assembled missiles or rockets with liquid fuel motors.	"Rocket ammunition with explosive projectiles."	A	Fire and shock are the primary hazards to this class of ammunition. They are particularly dangerous because of (1) their tendency to detonate en masse if involved in a fire or subjected to shock, and (2) the combustibility and toxicity of the fuel if involved in a fire. All high explosive loaded items of this class having thin container walls are relatively easily ruptured or dented. Denting of the container walls by impact, though not sufficiently severe to rupture them may result in a partial or complete detonation. A certain degree of confinement combined with local heating of the contained explosive by a particular kind of impact causes instantaneous explosive action. These kinds of impacts are, striking against a rounded corner, similar to a hatch coaming, impact of one missile against another, or being struck by handling or transportation equipment. Toxicity by inhalation of fumes is increased when fuels are ignited as the intensity of poisonous fumes is increased. Care should be exercised to minimize the exposure of personnel to the toxic effects of these mixtures and to prevent damage to the container with resulting leakage or spillage.	Class X-D items shall not be stowed in the same hold or compartment with other military explosives, other dangerous cargo, or regulated items. Shall be stowed only in a lower hold, or "On deck protected," not on the square of a hatch. Shall not be overstowed. For stowage adjacent to other dangerous articles see § 146.29-59. Shall not be loaded at an ammunition loading pier. Must be stowed so that superstructure intervenes between it and other items that require "On deck" stowage. Preferred "On deck" stowage is aft.	1. Handle by hand or mechanical means. 2. Do not drop, drag, slide, tumble, walk or otherwise subject these articles to shock. 3. Do not use chute in loading or unloading. 4. Cargo nets shall not be used except to enclose a pallet, skipboard, or tray, or as a preventor or save-all. 5. Missiles, not crated or boxed, without external fittings or with external fittings protected by lug guards, may be rolled only under continuous hand control on level surfaces or on non-powered roller conveyors, provided these surfaces or conveyors are relatively level and free from projections. 6. Unboxed or uncrated missiles shall not be tiered in "making up" drafts (hoists). 7. No "cant" or barrel hooks shall be used on this class of ammunition. 8. May be loaded by use of wire rope slings, or by pallet, skipboard or tray fitted with cargo net or sideboards. 9. Slings for use in hoisting this class of ammunition must be approved for use by the Captain of the Port. 10. Single slings made up in multiple assembly with spreader may be used in handling missiles that do not exceed 1,101 pounds each. Two legged slings shall be used in handling missiles of more than 1,101 pounds each. (See table of Limiting Loads, Class X-A). 11. The maximum permitted weight per draft, when handled by pallet, skipboard, tray or pie-plate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 12. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 13. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
X-E Guided missiles, with liquid auxiliary power units, solid propellant motors, with HE warheads.	Completely assembled missiles or rockets with solid propellant motors and liquid auxiliary power units.	"Rocket ammunition with explosive projectiles."	A	Fire and shock are the primary hazards to this class of ammunition. They are particularly dangerous because of (1) their tendency to detonate en masse if involved in a fire or subjected to shock, and (2) the combustibility and toxicity of the fuel if involved in a fire. All high explosive loaded items of this class having thin container walls are relatively easily ruptured or dented. Denting of the container walls by impact, though not sufficiently severe to rupture them may result in a partial or complete detonation. A certain degree of confinement combined with local heating of the contained explosive by a particular kind of impact causes instantaneous explosive action. These kinds of impacts are, striking against a rounded corner similar to a hatch coaming, impact of one missile against another, or being struck by handling or transportation equipment. Toxicity by inhalation of fumes is increased when fuels are ignited as the intensity of poisonous fumes is increased. Care should be exercised to minimize the exposure of personnel to the toxic effects of these mixtures and to prevent damage to the container with resulting leakage or spillage.	Shall be stowed "On deck protected" only, not on square of hatch. Shall not be overstowed with any kind of cargo. Shall not be loaded at an ammunition loading pier. Must be stowed so that superstructure intervenes between it and other items that require "On deck" stowage. Preferred "On deck" stowage is aft.	1. Handle by hand or mechanical means. 2. Do not drop, drag, slide, tumble, walk or otherwise subject these articles to shock. 3. Do not use chute in loading or unloading. 4. Cargo nets shall not be used except to enclose a pallet, shipboard, or tray, or as a preventor or save-all. 5. Missiles, not crated or boxed, without external fittings or with external fittings protected by lug guards, may be rolled only under continuous hand control on level surfaces or on non-powered roller conveyors, provided these surfaces or conveyors are relatively level and free from projections. 6. Unboxed or uncrated missiles shall not be tiered in "making up" drafts (hoists). 7. No "cant" or barrel hooks shall be used on this class of ammunition. 8. May be loaded by use of wire rope slings, or by pallet, skipboard or tray fitted with cargo net or sideboards. 9. Slings for use in hoisting this class of ammunition must be approved for use by the Captain of the Port. 10. Single slings made up in multiple assembly with spreader may be used in handling missiles that do not exceed 1,101 pounds each. Two legged slings shall be used in handling missiles of more than 1,101 pounds each. (See table of Limiting Loads, Class X-A). 11. The maximum permitted weight per draft, when handled by pallet, skipboard, tray or pie-plate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 12. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 13. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 14. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
XI-A Chemical ammunition, lethal.	Chemical ammunition filled with lethal gases such as mustard gas (H), lewisite gas (L), nerve gas (GB), BW agents, phosgene gas (CG), hydrocyanic acid (AC), nitrogen mustard gas (HN), diphosgene (DP), chlorpicrin gas (PS), cyanogen chloride (CK) when shipped assembled with or without their ignition elements, bursting charges or fuzes. When these substances are shipped in drums, barrels, cylinders or other authorized containers they shall be classified Class A, Poison Gas. When these substances are shipped in authorized ICC specification containers or Chemical Corps specification containers of integrity equal to ICC containers (including shells, bombs and rockets without ignition elements, bursting charges or fuzes) they may be handled and stowed either as Class A poison gas or chemical ammunition Class XI-A. Includes but is not limited to the following items when filled with any of the above agents: Ammunition for guns with gas projectile (shell). Bombs, chemical. Bombs, clusters, chemical. Frangible grenade. Hand grenade. Howitzer shell. Land mine. Livens projector shell. Mortar shell. Rockets, chemical. Separate loading projectile. NOTE: The U. S. Army Chemical Corps or U. S. Navy, when shipping chemical ammunition, mark such ammunition and the containers thereof, in general, as follows: (a) By the use of color bands painted upon the ammunition the containers thereof; by letter symbol to indicate the particular kind of chemical therein and the word "Gas" stenciled upon the ammunition of the containers thereof. (b) Persistent gases are marked with two (2) green bands. Nonpersistent gases with one (1) green band. (c) The word "Gas" will be stenciled upon shells and upon the outside container of shells, grenades, bombs, candles, etc., the stenciling to be of the same color as the designating band. (d) The bodies of all ammunition containing gas will be painted gray.	"Ammunition for cannon with gas projectile." "Explosive bomb" "Explosive projectile." "Explosive mine" "Hand grenade" "Rifle grenade" "Rocket ammunition with gas projectile." Shipping name of item when shipped as Class A poison.	A A A A A A A Pois. A	This type of ammunition or bulk shipments of these substances in containers other than ammunition, represents a particular and special hazard. Minute quantities of either liquid or vapor can cause serious burns and death. The liquid or vapor will contaminate everything with which it comes in contact, cause serious and painful burns to exposed portions of the body and the eyes, and attack the respiratory system usually with fatal results. Nerve gas is highly toxic, quick acting nerve poison. It can be absorbed through any body surface including the respiratory tract, skin, eyes, and gastrointestinal tract. The rapidity of action of nerve gas and absence of identifying symptoms may incapacitate a person so rapidly that he may be unable to take individual protective measures.	*Chemical ammunition stowage, special stowage, or portable magazine* Bulk shipments of chemical agents in ICC cylinders, tanks or Chemical Corps specification containers of integrity equal to ICC containers may be stowed in a shelter deck space or in a deck house suitable for such stowage. Chemical ammunition (explosive) shall be stowed in a deep tank, lower hold or between deck, and such stowage shall be effectively sealed off to prevent the escape of any leakage which may take place. (See § 146, 29-85.) Drums or other authorized ICC or Chemical Corps specification containers filled with Class A poison gas may be stowed in the same hold or compartment with chemical ammunition Class XI-A. For stowage adjacent to other dangerous articles see § 146.29-59. May be loaded at a temporary location authorized by the Captain of the Port for the specific loading. When given chemical ammunition stowage, see § 146.29-85 for additional requirements.	When possible and the amount of such ammunition or containers of these chemical substances warrants, the loading and stowage of chemical ammunition or chemical agents for such should be supervised by a representative of the appropriate Army technical service (Chemical or Ordnance Corps) or Navy Department. 1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Shall not be rolled except under hand control and on a level surface without appreciable incline. 5. Packages shall be braced so as to prevent any movement. Top tiers shall be braced to prevent upward movement. 6. Packages or containers shall be stowed in the position indicated by their markings. When not so marked, boxes shall be stowed on the most stable side and arranged in such a manner that the joints between boxes are staggered. 7. No packages shall be "cant" stowed. 8. Dunnage shall be applied to the sides, ends and tops of the boxes before bracing is applied. 9. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with removable sides are authorized. 10. Cargo nets without trays, skipboards, pallets or pieplates are not permitted. 11. Wire rope slings are permitted when handling unboxed bombs or containers filled with this class of chemical warfare material. 12. The maximum permitted weight per draft when handled by tray, skipboard, pallet, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 13. Single bombs or other unit containers weighing in excess of 2,200 lbs. must be loaded or unloaded one at a time. 14. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 15. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 16. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
XI-B						
Chemical ammunition, nonlethal.	Chemical ammunition filled with non-lethal gases such as Chloracetophenone gas (CN), Chloracetophenone solution (CNB) or (CNS), Brombenzylcyanide (BBC) and Adamsite (DM) when shipped assembled with or without their ignition elements, bursting charges or fuzes. When these substances are shipped in drums, barrels, cylinders or other authorized containers, they shall be classified as tear gasses or irritating substances, Class C—poisons. When these substances are shipped in authorized ICC specification containers or Chemical Corps containers of integrity equal to ICC containers (including shells, bombs and rockets, without ignition elements, bursting charges or fuzes) they may be handled and stowed either as Class C—poisons or as chemical ammunition Class XI-B. Includes but is not limited to the following items when filled with any of the above agents: Ammunition for cannon with gas projectile (shell). Bombs, aircraft. Bombs, aircraft cluster. CN capsules. Gas identification sets. Grenades, hand. Grenades, frangible, hand. Grenades, rifle. Rockets. Shell, Livens projector. Shell, mortar. Tear gas candles. Tear gas pots. NOTE: The U. S. Army and Navy when shipping harassing gas ammunition, mark such ammunition and the containers thereof with the word "gas" and Chemical Corps symbol of the gas with one red band.	"Ammunition for cannon with gas projectile." "Explosive bomb" "Explosive projectile." "Hand grenade" "Rifle grenade" "Tear gas candle" "Tear gas grenade" "Rocket ammunition with gas projectile." Shipping name of item when shipped as Class C poison.	A A A A Pois. C Pois. C A Pois. C	Fire and intolerable vapors. The fire hazard of some of these items is similar to that of smokeless powder. The vapors are rarely lethal as concentrations far below the lethal range are intolerable. Gas mask provides complete protection.	*Chemical ammunition stowage, special stowage, or portable magazine* It is important to stow in locations not subject to temperatures above 100° F. Stowage shall be accessible from cargo hatch or other access means to the hold or compartment. Drums or other authorized ICC or Chemical Corps specification containers filled with Class C poison gas may be stowed in the same hold or compartment with chemical ammunition, Class XI-B. For stowage adjacent to other dangerous articles see § 146.29-59. May be loaded at a temporary location authorized by the Captain of the Port for the specific loading. When given chemical ammunition stowage, see § 146.29-85 for additional requirements.	When possible and the amount of such ammunition or containers of these chemical substances warrants, the loading and stowage of chemical ammunition or chemical agents for such should be supervised by a representative of the appropriate Army technical service (Chemical or Ordnance Corps) or Navy Department. 1. Handle by hand or mechanical means. 2. Do not drop, drag, tumble, walk or otherwise subject packages to shock. 3. Do not use chute in loading or unloading. 4. Shall not be rolled except under hand control and on a level surface without appreciable incline. 5. Packages shall be braced so as to prevent any movement. Top tiers shall be braced to prevent upward movement. 6. Packages or containers shall be stowed in the position indicated by their markings. When not so marked, boxes shall be stowed on the most stable side and arranged in such a manner that the joints between boxes are staggered. 7. No packages shall be "cant" stowed. 8. Dunnage shall be applied to the sides, ends and tops of the boxes before bracing is applied. 9. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with removable sides are authorized. 10. Cargo nets without trays, skipboards, pallets or pieplates are not permitted. 11. Wire rope slings are permitted when handling unboxed bombs or containers filled with this class of chemical warfare material. 12. The maximum permitted weight per draft when handled by tray, skipboard, pallet or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 13. Single bombs or other unit containers weighing in excess of 2,200 lbs. must be loaded or unloaded one at a time. 14. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 15. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 16. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
XI-C Fuels in containers for guided missiles and rockets.	Missile fuels are usually non-corrosive, highly combustible mixtures, shipped in drums of aluminum or glass containers, used as fuels for guided missiles or rockets. Includes but is not limited to: Acetonitrile (methyl cyanide). Aluminum borohydride. Anhydrous ammonia. Aniline. Diborane. Diethylene triamine. Diethylene glycol dinitrate, liquid. Dimethyl hydrazine, unsymmetrical. Ethyl alcohol. Furfuryl alcohol. Gasoline (AVGAS). Heptane. Hydrazine. Hydrazine hydrate. Kerosene. Liquid fluorine. Liquid hydrogen. Methyl alcohol. Monoethylaniline. Nitroglycerine, liquid. Nitromethane. Octane. Pentaborane. Pentane. Potassium cuprocyanide. Tetranitromethane.	Shipping name of item.	F. G. F. L. F. S. Oxy. M. Nonf. G. Pois. B	The principal hazard is its involvement in a fire since all of the fuels are highly combustible and toxic and under certain conditions will explode. Aniline-furfuryl alcohol mixtures are toxic through inhalation of the fumes or vapors, ingestion, and absorption through the skin. Toxicity by inhalation of fumes is increased when fuels are ignited as the intensity of poisonous fumes is increased. Care should be exercised to minimize the exposure of personnel to the toxic effects of these mixtures and to prevent damage to the containers with resulting leakage or spillage.	This class will *not* be stowed with any corrosive liquid (acids, etc.), oxidizing agents, or explosives. For stowage adjacent to other dangerous articles see § 146.29–59. May be stowed "On deck" and protected from direct rays of the sun and inclement weather, or may be stowed in a deep tank and such stowage shall be effectively sealed off to prevent the escape of any leakage which may take place. Pertinent parts of § 146.29–85 apply. Compatibility of items within this class shall be in accordance with § 146.29–99, Chart B. Must be stowed so that superstructure intervenes between it and other items that require "On deck" stowage. This requirement also applies to non-compatible items within this class. Preferred "On deck" stowage is aft. Drums may be tiered 2-high by use of metal dunnage of aluminum.	When possible, and the amount of substance warrants, the loading and stowage of fuels should be supervised by a representative of the appropriate Army technical service (Ordnance Corps) or Navy Department. 1. Handle by hand or mechanical means using extreme care against damage to the container resulting in leakage or spillage. 2. Do not drop, drag, tumble, walk or otherwise subject packages or drums to shock. Drums will *not* be rolled. 3. Packages shall be stowed in the position indicated by their markings; drums and kegs shall be stowed on end with bung holes up. 4. Do not use chute in loading or unloading. 5. Observe packages or drums for leakage or spillage and for odor of aniline or alcohol in the case of aniline-furfuryl alcohol shipments. If no odor is present and no evidence of leakage is present, the shipment is assumed to be in safe working condition and the cargo can be handled by personnel wearing the usual type of leather gloves and safety shoes. No other type of protective clothing will be required; however, in this operation as well as all other operations involving aniline-furfuryl alcohol mixtures, treadle type of deluge shower and a container of approximately 5% solution of acetic acid or strong vinegar must be available. 6. In the event of damage to a container resulting in leakage or spillage, stop operations, clear area of all personnel, render first-aid to personnel affected and spray copious amount of water on area affected. Decontamination must be handled with a minimum delay by personnel trained in this procedure and equipped with protective clothing and self-contained breathing apparatus. 7. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays with fixed or removable sides are authorized. 8. Cargo nets without trays, skipboards, pallets or pieplates are not permitted. 9. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 10. The maximum permitted weight per draft, when handled by pallet, skipboard, tray or pieplate fitted with cargo nets or sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. The limiting weights noted above are for a 5-ton boom. See § 146.29–41.

Classification, handling and stowage chart—Continued

Class	Description	I. C. C. marking	I. C. C. class	Hazard	Stowage	Handling
XI-D						
Oxidizers in containers for guided missiles and rockets.	Oxidizers for use with guided missiles and rockets are non-flammable liquids; however, they are strong oxidizers and if allowed to come in contact with readily organic materials or metallic powders, may cause spontaneous combustion. They are highly toxic producing poisonous vapors and fumes and capable of producing severe burns or death if improperly handled. Fuming nitric acid vigorously attacks most metals, particularly iron and steel. Includes but is not limited to: Compressed gas, oxygen. Hydrogen peroxide. Liquid nitrogen tetroxide. Liquid oxygen. Mixed acid (nitric-sulfuric). Red nitric acid, fuming. White nitric acid, fuming.	Shipping name of item.	Cor. L. Nonf. G. Oxy. M.	The principal hazards arise from the combustibility of organic materials when in contact with acids and the toxicity of fumes and vapors produced. The oxides of nitrogen, referred to as "nitrous fumes" if inhaled in appreciable quantities, may cause severe damage to respiratory and pulmonary tissues and, under certain conditions, may result in death. Color of the fumes is *not* an index to their toxicity. *All* nitric acid fumes are dangerous. Contact with the skin results in severe burns and may result in permanent scars or deformity. Contact with the eyes may cause blindness. Red Fuming Nitric Acid (RFNA) is not flammable in itself and cannot be detonated, but the combustibility of all organic material is greatly increased in contact with this acid. This acid is very hygroscopic (completely soluble), and its introduction *INTO* water will cause rapid evolution of heat with spattering of the acid. RFNA vigorously attacks most metals, particularly iron and steel. Nitric acid will react with salt water to liberate chlorine and other poisonous gases. Winterized water fire extinguishers containing salt as a freezing point depressant, should not be used to fight fires involving nitric acid. The use of large quantities of water, as a spray rather than a stream, to dilute the acid and extinguish the fire, is effective. Fire extinguishers of a suitable type should be provided wherever this acid is handled or stowed.	This class will *not* be stowed with any inflammable liquid fuels, metallic powders, or explosives. For stowage adjacent to other dangerous articles see § 146.29-59. May be stowed "On deck" and protected from direct rays of the sun and inclement weather, or may be stowed in a deep tank and such stowage shall be effectively sealed off to prevent the escape of any leakage which may take place. Pertinent parts of § 146.29-85 apply. Compatibility of items within this class shall be in accordance with § 146.29-99, Chart B. Must be stowed so that superstructure intervenes between it and other items that require "On deck" stowage. This requirement also applies to non-compatible items within this class. Preferred "On deck" stowage is aft. Drums may be tiered 2-high by use of metal dunnage of aluminum.	When possible, and the amount of substance warrants, the loading and stowage of oxidizers and acids should be supervised by a representative of the appropriate Army technical service (Chemical Corps or Ordnance Corps) or Navy Department. 1. Handle by hand or mechanical means using extreme care against damage to the container resulting in leakage or spillage. 2. Do not drop, drag, tumble, walk, or otherwise subject packages or drums to shock. Drums will not be rolled. 3. Packages shall be stowed in the position indicated by their markings; drums and kegs shall be stowed on end with bung holes up. 4. Do not use chute in loading or unloading. 5. Visually inspect packages or drums for evidence of spillage or leakage and for odor of nitrous dioxide fumes in the case of fuming nitric acid shipments. If no odor is detected and no fumes are visible, the shipment is assumed to be in safe working condition and the cargo can be handled by personnel wearing gloves and aprons of acid-resistant material, safety shoes and eye goggles. No other type of protective clothing will be required; however, two complete sets of acid-resistant protective clothing, including a self-contained breathing apparatus, of an approved type, must always be immediately available for emergency use. In this operation, as well as all other operations involving fuming nitric acid, treadle type of deluge showers and a container of approximately 5% solution of acetic acid or strong vinegar must be available. 6. In the event of damage to a container resulting in leakage, spillage or fumes, stop operations, clear area of all personnel, render first-aid to personnel affected and spray copious amount of water on area affected. Decontamination must be handled with a minimum delay by personnel trained in this procedure and equipped with approved type of protective clothing and self-contained breathing apparatus. Damaged containers will be removed only by such personnel. 7. Cargo handling stevedore gear may be trays, skipboards, pallets, or pieplates provided they are fitted with cargo nets or sideboards. Boxes or trays fitted with fixed or removable sides are authorized. 8. Cargo nets without trays, skipboards, pallets or pieplates are not permitted. 9. Lifts of palletized units shall not be tiered except when using a sling so designed as to prevent, by means of sideboards or netting extended upward to the uppermost height of the draft, the upper tier or tiers from shifting or falling from the draft. 10. The maximum permitted weight per draft, when handled by pallet, skipboard, tray, or pieplate fitted with cargo net or sideboards shall not exceed 2,400 lbs. plus 10%. 11. Drafts consisting of one or more palletized units shall not exceed 4,000 lbs. plus 10%. 12. The limiting weights noted above are for a 5-ton boom. See § 146.29-41.

PART 147—REGULATIONS GOVERNING USE OF DANGEROUS ARTICLES AS SHIPS' STORES AND SUPPLIES ON BOARD VESSELS

SHIPS' STORES AND SUPPLIES OF A DANGEROUS NATURE

1. Section 147.05–100 *Table S—Classification: Ships' stores and supplies of a dangerous nature* is amended as follows:

(a) Delete the item "Liquefied petroleum gas—non-liquefied petroleum gas" in column 1 and all text pertaining thereto in columns 2 through 7 (including footnote 1 referred to in columns 4 through 7).

2. Section 147.05–100 *Table S—Classification: Ships' stores and supplies of a dangerous nature* is further amended as follows:

§ 147.05–100 *Table S—Classification: Ships' stores and supplies of a dangerous nature*

Descriptive name of article	Characteristic properties, cautions, markings required	Label required	Required conditions for transportation			
			Cargo vessel	Passenger vessel	Ferry vessel, passenger or vehicle	R. R. car ferry, passenger or vehicle
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Fuel for heating, cooking, lighting. Alcohol, solid or fluid		No label required.	Alcohol, solid or fluid, permitted. Containers of solidified alcohol shall be properly secured on a fixed base. Fluid alcohol burners where wet priming is used shall have catch pan not less than ¾" deep secured inside the frame of the stove or the metal protection under the stove flanged up ¾" to form a pan.	Alcohol, solid or fluid, permitted. Containers of solidified alcohol shall be properly secured on a fixed base. Fluid alcohol burners where wet priming is used shall have a catch pan not less than ¾" deep secured inside the frame of the stove or the metal protection under the stove flanged up ¾" to form a pan.	Alcohol, solid, permitted. Alcohol, fluid, not permitted. Containers of solidified alcohol shall be properly secured on a fixed base.	Alcohol, solid, permitted. Alcohol, fluid, not permitted. Containers of solidified alcohol shall be properly secured on a fixed base.
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Hydrogen	*Inflammable gas.* *Inflammable and explosive with about 4% to 75% in air.* *Excessive quantities in an enclosed space may cause suffocation.* *Lighter than air.*	Red gas	Cylinders shall conform to ICC requirements and shall be fitted with a valve protection cap. Stowage: "On deck", protected from damage and the direct rays of the sun by a strong well-ventilated cage. Not more than 3 cylinders of hydrogen shall be carried as ships' stores and supplies.	Cylinders shall conform to ICC requirements and shall be fitted with a valve protection cap. Stowage: "On deck", protected from damage and the direct rays of the sun by a strong well-ventilated cage. Not more than 3 cylinders of hydrogen shall be carried as ships' stores and supplies.	Not permitted.	Not permitted.
Liquefied or non-liquefied petroleum gas.	*Inflammable gas.* *Components include propane, propylene, butane, butylene, and butadiene.* *Vapors from most petroleum gases are heavier than air and will form an explosive mixture with air over varying ranges.*	Red gas	Cylinders shall conform to ICC requirements and shall be fitted with a valve protection cap. Stowage: "On deck", protected from damage and the direct rays of the sun by a strong well-ventilated cage. Not more than 3 cylinders of liquefied or non-liquefied petroleum gas shall be carried as ships' stores and supplies.	Cylinders shall conform to ICC requirements and shall be fitted with a valve protection cap. Stowage: "On deck", protected from damage and the direct rays of the sun by a strong well-ventilated cage. Not more than 3 cylinders of liquefied or non-liquefied petroleum gas shall be carried as ships' stores and supplies.	Not permitted.	Not permitted.
• • •	• • •	• • •	• • •	• • •	• • •	• • •
Oxygen	Cylinders shall conform to ICC requirements and shall be fitted with a valve protection cap. *Oxygen is a strong supporter of combustion and greatly accelerates fire.* *Oxygen under pressure may cause grease, oil and other readily combustible and finely divided substances to ignite.* *Colorless, odorless and tasteless.* *Slightly heavier than air.* *Oil or other lubricants shall not be used on a valve or other fitting connecting to cylinders.*	Green gas	Stowage: In a cool ventilated location selected and supervised by the chief engineer with the knowledge and approval of the master. (Protected from temperatures exceeding 100° F.) Stow upright, secured in a rack, with valveprotection cap in place on cylinder. Cylinders shall be stowed in rack at all times, except when actually in use. Quantity limitations: Cargo vessels shall not have on board as ships' stores more than 3,000 cu. ft. of oxygen at any time.	Stowage: In a cool ventilated location selected and supervised by the chief engineer with the knowledge and approval of the master. (Protected from temperatures exceeding 100° F.) Stow upright, secured in a rack, with valve protection cap in place on cylinder. Cylinders shall be stowed in rack at all times, except when actually in use. Quantity limitations: Passenger vessels navigating inland or coastwise waters shall not have on board as ships' stores more than 1,500 cu. ft. of oxygen at any time. Passenger vessels going foreign or intercoastal shall not have on board more than 3,000 cu. ft. of oxygen at any time.	Not permitted.	Stowage: In a cool ventilated location selected and supervised by the chief engineer with the knowledge and approval of the master. (Protected from temperatures exceeding 100° F.) Stow upright, secured in a rack, with valve protection cap in place on cylinder. Quantity limitations: R. R. car ferries shall not have on board as ships' stores more than 1,500 cu. ft. of oxygen at any time.
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Subchapter T—Small Passenger Vessels (Not More Than 65 Feet in Length)

PART 175—GENERAL PROVISIONS

SUBPART 175.05—APPLICATION

Section 175.05–1 (a) is amended by revising Table 175.05–1 (a) to read as follows:

§ 175.05–1 ***Vessels subject to the requirements of this subchapter.*** **(a)** * * *

TABLE 175.05–1 (a)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]			
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 3]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 4]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	All tugboats and towboats.	All vessels except those covered by columns 3, 4, and 5.[8]
	Vessels over 65 feet in length.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers.[7] 3. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew. c. Towing and fishing vessels, in other than ocean and coastwise service, issued a permit to carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.	All vessels except those covered by columns 3 and 4.	None.
Motor	Vessels of not over 15 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	All vessels except those covered by columns 3, 4, and 5.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers.[7] 3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, and 5.
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or inflammable liquid cargo in bulk.[9]	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers, except: a. Yachts. b. Documented cargo vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, and 5.
Sail	Vessels not over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	None.
	Vessels over 700 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	None, except if required by 46 CFR Part 146.[6]	None.
Non-self-propelled	Vessels not over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying more than 6 passengers.[7]	None, except if required by 46 CFR Part 146.[6]	All barges carrying passengers except those covered by column 4.
	Vessels over 100 gross tons.	All vessels carrying combustible or inflammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges and inland barges when required by 46 CFR Part 146,[5] except those covered by columns 3 and 4.	All barges carrying passengers except those covered by column 4.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Explosives or Other Dangerous Articles or Substances, and Combustible Liquids on Board Vessels) of this chapter may also be applicable under certain conditions.

[3] Public nautical school ships, other than vessels of the Navy and Coast Guard shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical school ships, as defined by 46 U. S. C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels over 65 feet in length. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of not over 65 feet in length.

[5] Any vessel subject to R. S. 4472, as amended (46 U. S. C. 170), shall be inspected and certificated as a condition precedent to being permitted to carry such bulk cargoes when so specifically required by 46 CFR Part 146.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for the Safety of Life at Sea, 1948.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (sec. 1, 70 Stat. 151; 46 U. S. C. 390).

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Vessels covered by Subchapters H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of inflammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the inflammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

(Sec. 3, 70 Stat. 152, 153; 46 U. S. C. 390b)

Dated: June 25, 1958.

I. E. ESKRIDGE,
Rear Admiral, U. S. Coast Guard,
Acting Commandant.

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